

*LIPPINCOTT'S
EDUCATIONAL SERIES*

EDITED BY

MARTIN G. BRUMBAUGH, A.M., PH.D.

THE
RECITATION



SAMUEL HAMILTON, PH.D.



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Book H 2

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LIPPINCOTT
EDUCATIONAL SERIES

EDITED BY

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VOLUME V



LIPPINCOTT EDUCATIONAL SERIES

THE RECITATION

BY

SAMUEL HAMILTON, PH.D.

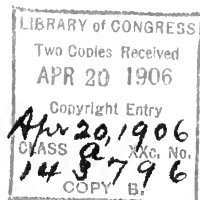
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AUTHOR'S PREFACE

THIS is neither a profound nor an exhaustive treatise on the recitation. It is only a series of easy lectures on the subject, prepared for young teachers. They are published in the hope that they will prove helpful to this class, and serve as a manual or guide in making the recitation a greater instrument of service. The discussion of the various themes in most cases is very brief, and often fragmentary. A full treatment of each would extend the limits of this volume far beyond its contemplated size. Emerson says, "The best part of a book is not what it contains, but what it suggests." And the whole discussion in this volume is intended to be suggestive rather than exhaustive.

Many of the professional books are too difficult for young teachers. They appeal to the more advanced students of pedagogy. This volume is an effort to aid the younger members of the profession by simplifying, and, if possible, clarifying for them, subjects usually regarded as difficult and obscure. Our effort has been to bring the whole discussion within the grasp of the average high-school graduate.

These lectures were not originally intended for publication. At first they existed simply as a set of outlines, used as a basis for discussion in presenting this phase of the work to teachers. These outlines are given at the close of each chapter. They may be rejected as imperfect, illogical, and incomplete ; but they served their orig-

inal purpose, and will reveal to the student at a glance the author's analysis of each theme.

It has been thought best to present these lectures here just as they were delivered, with their repetitions for emphasis, and their various summaries, so necessary in the lecture method of teaching.

In the preparation of these lectures each was regarded as more or less complete in itself. And yet our purpose was to study the recitation in its unity, its parts, its methods. Hence the classification as herein given.

This book goes forth with very modest claims. Its contribution to the great volume of pedagogical literature is very meagre. It may be even less, perhaps, than the proverbial two-pence. But it is an honest effort to aid young teachers by a careful study of some of the practical phases of school work. Our aim was to be sound in theory, simple in treatment, clear and concise in presentation, brief and pointed in discussion, and, withal, practical and helpful. To what extent these ends have been attained the reader must decide. With the poet we are ready to exclaim,

“What is writ is writ.
Would that it were worthier.”

S. H.

EDITOR'S PREFACE

EDUCATION is a process of soul-enrichment. This enrichment results both in the forming and in the informing of the soul. The former is culture, the latter is knowledge. They are distinct in theory but united in practice. Culture is the concomitant of knowledge. The converse is also true. But this concomitance is a variable relation. There may be a maximum of knowledge with a minimum of culture, or there may be a maximum of culture with a minimum of knowledge. There may also be all shades of relation between these extremes. The educational process as conducted by the teacher in a large measure determines the issue. The teacher may proceed in a manner that will form the mind for the acquisition of knowledge or in a manner that will inform the mind with many facts of knowledge. If, as is usually held, culture is worth more than knowledge, it follows that good teaching aims to secure a maximum of culture, mental power, with a minimum of data or knowledge.

Education is wasteful to the extent that it multiplies unrelated facts in the soul. Education is economic to the extent that it succeeds in enriching each new fact presented in consciousness. This enrichment is the result of establishing between the new fact and knowledge already in the soul the greatest possible number of essential relations. This gives greater significance to the new fact, renders it easier of recall, and adds to its cultural value. Poor teaching crowds the soul with multitudes of unre-

lated data. Good teaching organizes all the facts of knowledge into systems of thought. Thus the poor teacher is constantly insisting upon greater industry in the acquisition of knowledge, while the good teacher is patiently but industriously endeavoring to make the most of the facts in consciousness and thus in the forming of the mind for subsequent achievements.

Most courses of study are over-weighted. They compel attention to the less important phase of true teaching. This is unfortunate and can be justified upon no pedagogic grounds, unless, as some have said, it is necessary to provide an excess of data for poor teachers in order that they may be able to keep their pupils busy. But even this is an unworthy interpretation of the function of the school. Why make a poor course of study because of poor teachers? Is it the business of those that form the materials of instruction to cover the weakness of teaching by an over-loaded curriculum? A proper statement of the data of education would aid in eliminating worthless teaching. Surely this is a vital function of supervision.

The teacher in the last analysis is the course of study. His interpretation, more than its content, determines its pedagogic significance. What the school may do for the pupil is conditioned by what the teacher is in equipment, in experience, in professional spirit, and in personal worth. Everywhere and always the cry is for splendid teachers. The issues involved are of such far-reaching consequences that we shall never be content with anything short of ideal teaching by ideal teachers.

The focus of the teacher's influence is the recitation. At no other point does his life so vitally and so intimately touch the life of the pupil as in the recitation. That the

teacher should approach the recitation with right ideals and conduct it with wise processes is his crowning achievement. All that he may do in advance of the recitation by preparation and by organization finds its value measured solely in terms of efficiency in the recitation itself. For this central act all other processes exist. To fail here is to fail utterly. To succeed here is to succeed decisively.

To understand how to dispose the pupils' minds, to know how to induce right conditions in the learning act, to arouse interest, to quicken intellectual activities, to secure clear and facile expression, to implant an abiding love for learning, in short, to foster knowledge, culture and skill, these are the goals of the recitation.

What the teacher does in the recitation is largely conditioned by what he has done to prepare himself for the recitation. The teacher cannot be indifferent to the value of broad general training nor of constant daily preparation for the teaching activity in the recitation. Breadth and freshness of knowledge are alike essential to right recitational processes. There is also a quality of thought and of personality that is of moment. That teacher will succeed best who manifests sincere sympathy and concern for the pupil. The pupil must realize from the first that the teacher is a real friend whose heart is aglow with kindly concern. This enables the pupil to do his best. Whatever of criticism is admitted must be constructive rather than destructive. The aim of the teacher should be to dispose the pupil to make the most of the facts to be stated, considered, organized, and applied.

The recitation is more than a lecture period. The function of the teacher is more than that of telling facts and incidents to the pupil. The pupil's part in the recitation is most significant. The aim should be to cultivate free-

dom of expression. To this end it is well to have at least part of the recitation devoted to oral discussion. When the pupil's mind is passive and receptive the teacher has slight opportunity to measure the pupil's progress. When the pupil's mind is active and expressive the teacher has a clear view into his soul. This view is the teacher's best guidance. This active state of mind is also most conducive to the pupil's growth to independent thought, to the stage of development at which the teacher becomes dispensable and the pupil is self-guided in the acquisition of knowledge and power and skill. The wise teacher strives to render himself unnecessary to the pupil.

There are two aspects of the function of the recitation: First, the recitation is a test of exposition. It aims to show clearly to the pupil what is to be mastered and how this mastery is attained. Here the teacher does his best work. Second, the recitation is a test of expression. It aims to give the pupil occasion to prove the scope and quality of his knowledge. Here the pupil does his best work. Since no expression is adequate that does not issue from proper preparation it follows that the first business of the teacher is to test the preparation of the pupil. This implies also the duty of pointing the purpose of the lesson and giving guidance in the art of study. It is in this part of the function of the recitation that poor teaching is revealed. To demand good expression is manifestly unwise when the teacher has failed to give essential direction to the pupil. All active aspects of mind demand, as the final act, some form of expression. The last act of the recitation is to secure from the pupil a satisfactory statement of his thought. When the pupil can prove his grasp of the facts in the lesson by a statement that is pedagogically sane the recitation has achieved its purpose.

There is here also a most valuable occasion to impart incidentally but most significantly that fund of moral guidance which once set in the currents of the soul becomes, through habitual recall, character. The recitation is the teacher's opportunity to "point a moral," to link facts of the curriculum with the issues of life in conduct. To do this with the least appearance of dogmatic procedure is a fair test of good teaching. It will not do to ignore this obligation. It will not do to meet it in a bungling way. The wise teacher will study most to make morally significant all the activities of the pupil's mind.

The author of this treatise is an experienced and successful teacher and superintendent of schools. He knows from wide experience the quality of current instruction and the great possibilities of a wisely administered school. His head and heart are alike in intimate sympathy with sincere teachers who are striving to do the best things. From his abundant equipment for this important work he has herein given in a most practical and inspirational way the guidance needed by the American teacher in producing the highest good from the recitation.

M. G. B.

PHILADELPHIA, February 20, 1906.

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PART I

CHAPTER I

GENERAL VIEW OF THE RECITATION

A good recitation is the real test of the school. It shows as in a mirror, the interest, skill, and information of the teacher, and the work of the class.

GEORGE HOWLAND

A recitation is almost valueless, unless something definite is accomplished.

Selected

The recitation is beautiful just in proportion as it secures energy of thought, however halting and struggling it may seem.

TOMPKINS

THE RECITATION



CHAPTER I

GENERAL VIEW OF THE RECITATION

THE terminology of a subject is important. Words often have various meanings, and the sense in which they are used in any discussion determines the exactness of the thought conveyed. Vagueness of meaning and confusion of mind are sure to follow indefiniteness of expression. In this discussion, then, it is important that the sense in which the term "recitation" is used be clear and definite.

I.—THE TERM DEFINED.

The Recitation is not a Place. It requires a place, but it is in no sense a synonym of class-room. It also requires a period of time, yet it is not that period. It is not a place or a period, but rather a process or an exercise in which certain ends are accomplished.

In the literature of our profession the recitation is always regarded as a process or an exercise. Writers, however, do not agree as to the exact meaning of the term, consequently they differ in regard to its content and its limitations. Some use the term in a literal, others in a general sense.

1. Its Literal Meaning. Literally speaking, to Recite is to Tell or Say again what was formerly Learned.

This may be done in two ways. First, by telling what was learned in the exact language of the text ; or, second, by stating the substance of it in the pupil's own words. The latter is always preferable. It at least requires some thought and develops some power of original expression, while the former may be only a memory recital of words not understood. While *memoriter* recitations, meaningless to the child, are always to be avoided, yet it is wise to have the learner incorporate into his own phraseology as much of the choice language of the text as he can understand and use. This is one of the sources from which he enlarges and enriches his vocabulary and acquires the terminology of a subject. Strictly speaking, then, the recitation is the restatement of what was formerly learned either in the words of the text or in the child's own language. This is the historical meaning of the term. It has come down to us from the time when school exercises consisted mainly in repeating in the exact language of the text what had formerly been memorized.

If this comprises all that is included in the term, the process that it names is not in any sense a teaching exercise. The teacher may test preparation, knowledge, or skill, but he may not instruct, because to recite means to say, to repeat, to rehearse, or to relate, and not to teach, to learn, or to instruct.

2. **The General Meaning of the Term.** But the term "recitation" has a larger meaning than its etymology and its history suggest. Writers generally use it to embrace any and every school exercise in which the teacher teaches, tests, or trains, or in which the child acquires knowledge, power, or skill. The process is thus made to embrace almost every exercise except the formal examinations. This is the general meaning of the term,

and while it is wise ordinarily to use words in their etymological sense, yet in this discussion we must depart from that rule and use the term in its generally accepted sense.

3. The Recitation, then, is any Process or Exercise in which the Teacher teaches, tests, or trains, or in which the Learner acquires Knowledge, Power, or Skill.

II.—PARTIES TO THIS PROCESS.

As a process, the recitation is two-fold. It includes both teaching and learning. It, therefore, implies the active participation and co-operation of at least two persons, a teacher and a learner. The one presents, the other grasps; the one questions, the other responds; the one directs, the other does; the one gives, the other receives; the one teaches, the other learns; the one inspires, the other is inspired. Both must think and grow, and each must aid the other in attaining the desired end.

1. **The Teacher's Part.** The teacher's part is to teach, to test, and to train; to lead, to guide, and to inspire; to correct errors, to form habits, and to mould character. This is accomplished through the wise use of all or part of the following means:

(a) By preparation of the child's mind to receive the subject matter.

(b) By preparation of the subject matter.

(c) By presentation of the subject matter.

(d) By explanation and illustration of the subject matter.

(e) By suggestions about the subject matter.

(f) By leading the child to think about and understand the subject matter.

(g) By what the teacher is and by what he does.

2. **The Pupil's Part.** The part of the pupil is to acquire knowledge, power, or skill, to form right habits, and to grow in nobility and purity of character. These ends are attained through some or all of the following means :

(a) By examining the subject matter.

(b) By understanding and interpreting it.

(c) By assimilating it.

(d) By remembering it.

(e) By applying and using it.

All these may be summed up by saying the intellectual and moral growth of the child is determined by what he thinks, feels, and does. For thoughts create desires, desires lead to action and effort, and these are the instruments both of scholarship and character. As a man thinks, so he should feel and act, and as he feels and acts, so he is. Marcus Aurelius says, "The soul is dyed by the thoughts ;" and Bailey sings,—

We live in deeds, not years ; in thoughts, not breaths ;

In feelings, not in figures on a dial.

We should count time by heart-throbs. He most lives

Who thinks most, feels the noblest, acts the best.

Feelings, thoughts, and acts, then, sum up all the means by which the pupil is to be trained.

III.—IMPORTANCE OF THE RECITATION.

The recitation is an important school exercise. In the lower grades it is by far the most important. And in what it does for the child in the advanced grades and in the high-school, it ranks next to the art of study. The

class-room is the enchanted ground of pedagogy ; the sacred spot where two souls meet, each to influence and to be influenced by the other ; the trysting place of truth and power, where they loiter that they may be seized and used by the child who has the courage to make the capture ; the mart of mind, where earnest effort is the only coin needed to purchase a whole kingdom of moral, intellectual, or spiritual truth. The recitation is the very gateway of opportunity, both to the teacher and the child. To the teacher it is an opportunity to impart knowledge, to guide effort, to develop power, to form habit, to mould character, to deepen impression, to train in the art of study, to inspire the child with a love of learning, and to fix forever his habits of thought and expression. To the child it is an opportunity to acquire knowledge, power, and skill, and to catch glittering glimpses of the great sunlit valley of truth from the glowing hilltops of the teacher's inspiration. A great teacher, with a pent-up personality, throbbing with a desire to help others, is always the centre of an unconscious influence that shapes the life and character of childhood. But the recitation period is the time when that influence becomes conscious and active, and when the teacher with deliberate premeditation, with a definite purpose, and with a well-prepared plan, tries to aid and direct the child and to control his life and his destiny. And any exercise in which every influence, every effort, every energy of the teacher is put forth in the highest interests of the child must be of supreme importance.

1. The Recitation is Important because its Character will, to a Great Extent, determine the Child's Habits of Study. Children generally do what they are

The Enchanted
Ground of
Pedagogy.

expected to do; they always do what they are required to do. Right action leaves a tendency to repeat itself, and oft repeated, forms habit and crystallizes into character. Small expectation is the husbandman of a scant crop. The teacher who expects and who accepts imperfect preparation, superficial work, a hazy conception of truth, and a careless expression of it, will generally get them. And these are the little foxes that are destroying

The Little
Foxes.

the tender vines in many a school-room vineyard that would otherwise be fruitful. But blessed is the child that comes under the influence of a teacher who demands vigorous work, thorough preparation, and clearness of comprehension. Such a child will learn to love truth for truth's sake. He will finally acquire the instincts of the scholar and wear the badge of true culture, because of the student habits formed under the hallowed influence of such a teacher.

2. The Recitation is Important because it will help to determine the Child's Habits of Thought and Expression. A memory recitation without thought is always of doubtful value, but one with hazy thought and careless expression on the part of teacher and child is detestable. Careless thinking produces careless habits, both of thought and expression; while clearness and vigor of thought give accuracy and tenacity to memory, and clearness and vigor to expression. All true teaching holds clearly and distinctly before the mind of the child the thing he is to see and to think. It aims to give

Functions of
the Recitation.

accuracy and definiteness to the thought, and force and clearness to the expression. The best fruit of the recitation is not a knowledge of the subject matter, but rather certain qualities of mind. These are accuracy of observation, distinctness of per-

ception, clearness of apprehension, completeness of apprehension, correctness of expression, and all those mental qualities that are summed up in what we call the child's habits of thought and expression.

3. The Recitation is Important because it inspires the Pupil with a Love of Learning. It is largely during its progress that the child lights the torches of its inspiration with the sacred fire that always burns on the true teacher's altar. Life begets life, interest fires interest, inspiration springs from inspiration. The flashing eye, the glowing heart, the beaming countenance, the bristling thought, the burning word, and the all-consuming love of truth in a great teacher, await only the opportunity of the recitation to arouse the dormant energies, to awaken the slumbering activities, to call into exercise all the powers, to enkindle a love of learning, and to fire with zeal and enthusiasm every member of a class.

"Great personalities make great universities," said President Butler. And just as surely, great personalities make great teachers. The recitation is the place where this personality becomes most active and potent. There eye meets eye, pulse feels pulse, heart warms heart, mind touches mind, thought arouses thought, zeal fires zeal, and spirit inspires spirit.

Every true recitation arouses, stirs, stimulates. It fills the mind and heart with a burning zeal. It lights the torches of desire with a never-quenching flame of enthusiasm. It touches the electric buttons of a child's inspiration, and sends him out into life an active, inquisitive, aggressive student, eager to track truth to its secret lair in earth, or sea, or sky. And so eager, so enthusiastic is he, that he will follow the trail at any cost, through any gloom and

Tracking
Truth to its
Secret Lair.

over any obstacle, to the secret cavern where it was first hid by the Almighty.

Such is the value of the recitation when a real master stands back of the teacher's desk, when a high priest of mind, matter, and method presides at the sacred altar. At such a shrine, presided over by such a teacher, the child gets facility and accuracy for his tongue, skill and scope for his faculties, wisdom and power for his mind, eyes and ears for his intellect, and arms and wings for his soul ; so that he may be a power for good as his knowledge-thirsting spirit wings its flight from spot to spot in its search for hidden truth, the sacred complement of seeking minds.

IV.—CHARACTERISTICS OF A GOOD RECITATION.

It is difficult to specify the essential characteristics of a successful recitation, as they will vary more or less with time and place. But a few general suggestions may be made that will throw some light on the subject at important points.

1. **The Recitation should be Short.** This is especially true in the elementary school. Attention consumes brain cells rapidly. Children cannot give vigorous, mental action and prolonged attention to any subject. Good teaching burns up the accumulated store of mental energy in a short time. The point of brain fatigue is soon reached with little children, and those housed in over-heated and poorly ventilated rooms, and with all who are deprived of frequent periods for play in the open air. These periods give the mind time to restock itself with energy. Prolonged attention, therefore, without reaching the point of brain fatigue is impossible. And when this point is reached,

A Paradoxical
Statement.

all further effort is useless. This is why, paradoxical as it may seem, some fairly good recitations could be improved by shortening them.

The length of the recitation will vary according to the grade, from five minutes in the primary, to perhaps forty in the high-school. What then shall determine its length?

(a) The age of the pupils.

(b) The temperature and purity of the school-room atmosphere.

(c) The mental energy of the pupils disposable at that time.

(d) The extent of the preparation made for it.

(e) The energy-consuming power of the teacher and the subject matter.

These principles may need some explanation. It is evident that every recitation in which little children take part should be short. It is equally clear that if the air is vitiated and over-heated the period must be short, since these conditions tend to stupefy the child, to suppress his interest, and thus render attention almost impossible. Indeed it would be wise perhaps to refuse to try to teach under such unfavorable conditions, for failure is likely to result, unless the teacher's effort is unusually vigorous.

Length of
Recitation.

Child study has taught us that at certain hours of the day the pupil has more vital energy than at other times. From nine to eleven, and from two to half-past three the amount of disposable energy for any effort is greater than at other times. As a result these are the periods for long recitations and for the study of difficult subjects. It would be unwise to make the recitation long immediately after the noon hour, when the digestive organs

are draining the reservoirs of the child's vitality in their effort to digest his dinner. A short period at that time easily exhausts the supply and leaves the child without power to apply to the work at hand.

A leading purpose of the recitation is to train the pupil to habits of study. And while one must often teach the child in the primary grade before it is able to study, yet in higher work, a good teacher will gauge the length of the recitation at least partly by the extent of the preparation made by the pupils.

A good recitation is generally shorter than a poor one. Good teaching is vigorous. It consumes the child's stock of vitality rapidly, while poor teaching calls for its expenditure at a slower rate. Running exhausts an athlete quicker than walking. He may walk for hours, but the periods for running must be short. Suppose a pupil has

Fanning the
Fires of
Interest.

a hundred units of mental energy at his disposal. If good teaching calls for its expenditure at the rate of ten units per minute, the stock will be exhausted in ten minutes. But poor teaching does not fan the fires of interest. It therefore consumes the fuel more slowly, perhaps at the rate of five units per minute. If so the supply will last twenty minutes. Thus vigorous teaching drains the child's reservoirs of vital energy much more rapidly than poor teaching. Every good recitation is, therefore, comparatively speaking, a short one.

2. The Recitation should have a Brisk Mental Movement. This is necessary to sustain the interest and hold the attention. Tompkins defines the recitation as "a movement of thought on a given theme." The flow of thought should be strong and rapid, not slow and sluggish. The mind of the child should be carried

rapidly from point to related point. Skilful questions given at intervals of one minute each may be very helpful, but the same, given at intervals of fifteen seconds, may be much better. The mind must move ; it cannot rest at any point but for a moment without wandering. In a recitation characterized by a sluggish flow of thought, enticing suggestions dissipate interest, and irrelevant associations lead the mind away from the point at issue. But a brisk movement sustains the interest and holds the attention. The mind is kept busy noticing and discovering the related points as presented, and has no time to wander into forbidden fields. The movement of the thought is guided and pushed briskly forward by questions, suggestions, explanations, and directions. Such a recitation is a good remedy for stupidity. It develops alertness of mind, a quick perception, and a prompt mental response.

But there is another side to this question of movement. There is a danger of being too brisk sometimes, in not giving a slow mind sufficient time to focus its stock of related facts upon the new idea in order to give it interpretation and place. This is a danger point to be noticed and avoided.

How then shall we gauge the mental movement, the flow of the current of thought in a recitation? This question cannot be definitely answered, but the teacher should see that the mental movement is brisk enough to sustain the interest and hold the attention ; brisk enough to demand and develop that alertness of mind that is the essential characteristic of the learning process, and to destroy that sluggish mental pace that, long continued, makes the slow pupil stupid.

3. The Recitation should make a Presentation of the Subject that is Clear, Strong, Logical, and to the Point, and at the Same Time Systematic and Complete. These are essential qualities, but they are only external phases of presentation. There must be an inner activity responding to the external stimuli. This activity must be aroused, sustained, and directed, or the external presentation of the subject matter will be devoid of results.

For a more extended discussion of this subject the reader is referred to the lecture on presentation. These, however, are the essential characteristics of a good presentation. And the teacher who is clear, strong, and logical in his work, who is loyal to a true aim, faithful to an orderly plan, and who teaches directly to the point at issue, will always meet with a large measure of success. And a lesson thus presented, when properly joined to what preceded it, is a strong link in the chain of instruction.

4. The Recitation must be adapted to the Child's Needs. The work should be pitched at the point of the child's mental grasp at which it gives its richest return. It is well to remember that "strength comes from wrestling," and that swimming against the current gives more strength than swimming with it. The best return comes, not from mental exercise, but from that grade of mental action that is pitched at the highest level of the child's best effort. The race-horse that is never pushed to his best efforts seldom increases his speed. So the child that works at a pace of effort too easy for him gets little return.

Much of the ordinary school work is so easy for the child that the effort is almost without recompense. We classify and simplify, we analyze and dilute the

child's mental food, until there is nothing left for his mental digestive apparatus to do. We waste much valuable time in trying to teach him what he already knows, to show him what he sees, and in trying to explain what he clearly understands. This is one extreme.

In the other, truth, scarcely perceptible in the mist and fog, swings in hazy circles far beyond the child's power to see and to grasp, or stalks ^{Two Extremes.} forth in solid phalanx, clad in the armor of a vocabulary foreign to him. Good teaching avoids both of these extremes.

It loads the lesson with truth that is neither too light nor too heavy for him, but just of sufficient weight to test his strength. It holds the truth above him, not within easy reach, nor yet beyond his grasp, but just where it will require a vigorous effort to seize it. It strives to keep the child's mind working at least part of the time on the highest level of his best effort.

V.—INDICTMENTS AGAINST THE AVERAGE RECITATION.

If the average recitation were on trial it would not be difficult to frame some serious indictments against it. Let us notice some of them.

1. **The Average Recitation is too Indefinite.** It is often so aimless that it is almost worthless. It lacks purpose, point, aim, edge, object, and end. It may be likened to a blind guide leading a blind traveller from no place to nowhere. A great telescope pointed into space and focused on nothing reveals nothing. To prove its worth it must be trained on some objective point. So the recitation to be of value must have an aim. The

teacher who is not trying to do anything in particular accomplishes very little. And many recitations simply require the children to say over again their lessons in the most aimless way, and therefore with little or perhaps no profit to them.

Three results, the unpedagogical influences of which are apparent even to the casual observer, come from this aimless work. (a) It wastes much valuable time, consumes vast quantities of mental effort, and gives practically nothing in return. (b) "It degrades the noble art of teaching into a lifeless stereotyped trick, deadening alike to both teacher and pupil." (c) It encourages the growth of stupidity in the children.

Stupidity is a growth. It can, therefore, be encouraged, and aimless recitations often teach it more than they teach anything else. Aimless work is automatic and mechanical. One can do it without thought. As a result it suppresses spontaneity and interest, induces indifference, and finally lulls into mental inactivity, and thus furnishes the very quality of school-room atmosphere in which stupidity thrives best. A recitation may be weak at many points, but it is always fundamentally weak if it lacks aim.

2. **The Average Recitation too often fails to Stimulate the Individual Thought of the Child.** Mental exercise is the law of mental growth. We learn to think by thinking, and the recitation that fails to make the individual think has not done its best for him. The average recitation deals too much in empty words and not enough in thought. The king in "Hamlet," while trying to pray after the murder of his brother, cries out in despair:

"My words fly up, my thoughts remain below :
Words without thoughts never to heaven go."

And words without thoughts are just as useless in the recitation as they are in prayer. A child must do more than tell what the text says; he must think thoughts suggested by it. The subject matter is the material with which to start and operate the thinking process. It is well to know the subject matter, but it is better to think about it. Not the author's thought, or the teacher's thought, but the child's own thought, occasioned by the exercise of his mind upon the material of the lesson, is of vital importance in all higher grade classes. A memory disgorgement of undigested facts is a travesty and a sham; an empty farce and a burlesque on the noble art of teaching. "Knowledge comes from observing; wisdom comes from thinking." And the mind that thinks clearly and vigorously about the subject matter is rewarded by increased strength and wisdom. The teacher must test preparation, but in the higher grades and the high-school the recitation must not stop at that point. Indeed the valuable part of it begins there. The pupils in such grades, if they have made proper preparation, ought to know the surface subject matter of a lesson so well that most of the recitation period can be given to a discussion of it. Many recitations thus end really where they should begin.

Many Recitations end where they should begin.

Instruction in the higher grades should crystallize into individual opinions, beliefs, and conclusions about the subject matter. The mind of the child must be put to work upon the material of the lesson, and the mental action thus occasioned must be guided until certain ends are reached. A recitation may have every other essential quality, but if it lacks individual thought on the part of the pupil it is a failure. For thinking educates, and nothing else can be substituted for it.

3. **The Average Recitation is Subject to Serious Charges** because it so often fails to instruct the Child. It tests the pupil's knowledge of the subject, but it does not instruct him. Indeed many recitations are only examinations. In teaching, the current of truth, so to speak, is directed toward the child. The aim of the teacher is to have the class see, grasp, or comprehend something. In an examination the very opposite takes place: the current of truth is reversed and flows from the class toward the teacher, as he draws from them their knowledge of the lesson. This weakness is very prevalent. We examine, examine, examine, but we seldom teach. In the schools of Germany emphasis is placed upon the teaching recitation. Without intending to do so, we are placing the emphasis on the examining recitation. This may not explain why the German boy reaches the university at least one year earlier than his American brother, but it certainly retards the latter. And our school work would be greatly strengthened if the average recitation was devoted to teaching rather than to testing.

4. **Another and Most Serious Indictment against the Average Recitation** is that there is too much **Waste Time** in it. This is due to inattention, to repetitions, to senseless questions, and to the habit of reviewing without profit to the child what he clearly understands. One recites and makes progress while many wait and waste time. The time devoted to the recitation is out of all proportion to the results that come from it. This is what President Harper had in mind when he said, "The recitation is too expensive." And waste time in any school exercise is a most serious charge against it.

The recitation is a valuable instrument for good. But it is robbed of its vitalizing power when it lacks aim, individual thought, and the investigating spirit, when its length is not adjusted to the needs of the child, and when by poor class management the teacher fails to make each child's time purchase its equivalent in results.

TOPICAL OUTLINE

I.—THE TERM RECITATION DEFINED.

1. Its literal meaning.
2. Its general meaning.
3. The recitation defined.

II.—PARTIES TO THE PROCESS.

1. The teacher's part.

- (a) To teach, test, and to train.
- (b) To lead, guide, and inspire.
- (c) To correct errors, form habit, and mould character. These ends are attained :
 1. By preparation of the mind.
 2. By preparation of the subject matter.
 3. By presentation of the subject matter.
 4. By explanation, suggestion, and illustration.
 5. By leading the child to think about the subject matter.
 6. By what the teacher is, and what he does.

2. The pupil's part.

- (a) To acquire knowledge, power, and skill.
- (b) To form right habits.
- (c) To grow in nobility and purity of character. These ends are attained :
 1. By studying the subject matter.
 2. By understanding and interpreting it.
 3. By assimilating it.
 4. By remembering and applying it.
 5. By what he thinks, feels, and does.

III.—IMPORTANCE OF THE RECITATION.

1. It determinates the child's habits of study.
2. It determines his habits of thought and expression.
3. It inspires the pupil with a love of learning.

IV.—CHARACTERISTICS OF A GOOD RECITATION.

1. It is short.
 - (a) Length of period determined :
 1. By the age of the child.
 2. By the temperature and purity of the school-room atmosphere.
 3. By the amount of mental energy disposable at the time.
 4. By the extent of the pupil's preparation.
 5. By the energy consuming power of the teacher and the subject matter.
2. It has a brisk mental movement.
 - (a) To sustain interest and hold attention.
 - (b) To demand and develop alertness of mind.
3. The presentation is clear, strong, and to the point.
4. It is adapted to the child's needs in matter and method.

V.—INDICTMENTS AGAINST THE AVERAGE RECITATION.

1. It is too indefinite, and thus tends :
 - (a) To waste time.
 - (b) To degrade the art of teaching.
 - (c) To cultivate stupidity.
2. It fails to stimulate individual thought.
3. It fails to instruct the child.
4. It wastes too much time.

PART I

CHAPTER II

THE PURPOSE OF THE RECITATION

All aimless teaching is poor teaching.

EMERSON E. WHITE

We must adapt our effort to the express object we wish to attain.

MARY WILLARD

When thou dost purpose aught
Be sure to do it.

GEORGE HERBERT

It is aim that makes the man.

PALEY

To know a man, observe how he wins his object.

COLTON

To speak to a purpose, one must speak with a purpose.

J. H. FRISWELL

Purpose directs energy, and makes energy.

PARKHURST

Energy implies a fixed, settled, and unwavering purpose.

JOSEPH ATTERLEY

CHAPTER II

PURPOSE OF THE RECITATION

The secret of success is constancy to purpose.—BEACONSFIELD.

I.—AIM OF THE RECITATION DISCUSSED.

THE purpose in any school exercise is of first importance. Aimless work is fruitless and therefore useless. The hunter who shoots with his eyes shut seldom brings home any game. And the teacher who blindly and without aim hears the children say their lessons, meets with the same measure of success. A blind man does not make a good carpenter. He cannot saw to the line, or hit the nail on the head. And a purposeless recitation is no more effective than a blind carpenter.

1. *Aim in the Recitation is Vital.* It tells where instruction should begin, the course it should take, how it should proceed, and when it should end. A good recitation begins at the right place, proceeds in the right way, and closes when its purpose is accomplished. And to do this it must have a definite beginning, a definite plan of procedure, and a definite aim.

2. *Aim saves Time.* "A straight line is the shortest distance between two points," and in the recitation definite aim is the compass that marks out that line. "Sailing not drifting" is the teacher's motto, and to do this one must follow the polestar of purpose from start to finish. "A lame man on a straight road," says Bacon, "reaches his destination sooner than a courier who misses his way." Without a definite aim the

teacher is likely to lose his way, to wander about, and thus waste much valuable time. And "nothing," says Theophrastus, "is more precious than time, and those who mispend it are the greatest of all prodigals."

3. Aim conserves Energy. The gun that is fired without aim wastes its shot. A thousand such guns discharged at random in the neighborhood of a fortress accomplish nothing. A few well aimed shots even from smaller pieces are far more effective. A wise military man conserves his forces by concentrating them upon the weakest point in the enemy's lines, the point where he hopes to make his attack successful. So a good teacher saves her energies by concentrating them upon the desired end. Scattered effort dissipates energy, but concentration and aim conserve it. *Economy of time and energy* is the touchstone of advancement.

4. The End always determines the Means. What you will do in a recitation is always determined by what you want to do, by what you are trying to do, and what you are trying to do always determines what is necessary to reach the desired end. The painter who expects to paint a high building selects a long ladder. If the traveller is going to a distant city he selects as a means of transportation a train or a boat. But if his destination is some farm-house nearby, he selects a horse and buggy. So the end in a recitation determines the means. The teacher selects the methods and devices that seem to promise aid in attaining the desired end.

5. The Aim tests the Means. It enables one to try all things and to hold fast that which is good. We keep and use that which is helpful, and throw aside as useless anything that will not aid us in reaching the desired end. "The proof of the pudding is in the eat-

ing." So the value of any device is the aid that it will render in reaching the desired end. Thus the aim tests the value of the means.

6. Aim Guides the Process while in Operation. What a blacksmith desires to make of a piece of iron decides what he will do with it. But aim does more than this; it gauges the heat, guides the arm, measures the blow, and tells when the work is completed. The destination of the traveller not only determines the course he will take, it guides his progress at every step. So aim in the recitation not only selects and tests the means, but it also guides them while in operation. It is the monitor that tells what to do at each step. What you are trying to do in a game of checkers must guide not one, but every move. So aim in the recitation guides the process at every turn.

7. Aim Unifies Effort. Every part of the work is organized with reference to the end, and contributes to it. Without aim one effort may counteract and annul another. Aim in building a house unifies the labor of a dozen workmen, each contributing his part toward the desired end. The glass in the hands of the old philosopher focused the sun's rays upon the enemy's boats as they lay in the harbor and set them on fire. So aim in the recitation concentrates and unifies effort. And every act of the teacher, as well as those of the pupils, blends into one united, concentrated effort to reach the desired end.

8. Aim is Essential to Success. Aim attained is success, and success is the result of effort directed by a controlling purpose. The teacher succeeds when his ends are attained; he fails when they are not realized. The measure of success is the amount of progress made

toward a desired end. If there is no aim, there can be no success, because there is no progress toward an end. Right purpose realized is the true measure of one's success. Success, then, without aim is impossible, because it is the prize that effort receives when it reaches the end, and if there is no end there can be no success. To work without purpose is to fight with a leaden sword.

9. Aim Encourages Effort. Success is a great source of encouragement. It is one of the real mainsprings of human action. But you cannot succeed without aim, and, as you realize this aim, you note the progress you are making. This inspires to greater effort and arouses to greater action. Thus aim stimulates effort. It makes success possible, it inspires both teacher and pupil, and stimulates them to greater action by crowning their efforts with the joy of achievement.

10. Aim is just as Important as Effort. But they must be united. Either alone, like faith without works, is useless. United they are the twin angels of progress, the keynotes of success, the linchpins in the chariot of achievement. Aim and effort are complements. They must work hand in hand in every recitation. The one aims the gun, the other fires it; the one is the track that guides the wheels of progress, the other is the fuel that moves them; the one is the eye that directs the warrior's arrow, the other is the strong arm that sends it to its quarry. One is just as essential as the other, but they must work together. United they forge the shaft of human progress; separated, they shatter its prospects.

Aim then, in the recitation, is important, vital, and necessary. It saves time, conserves energy, selects

methods, tests the means, guides the process, and measures the progress of the work. It gives unity to labor, energy to action, leads the way to success, and crowns effort with the joy of achievement.

II.—AIMS ENUMERATED.

What, then, are the aims of the recitation so vital, so necessary, and so indispensable to success? To this question numerous answers have been given, and to enumerate some of those suggested by the great educational leaders of the nation will be a sufficient answer to it at this time.

The late Dr. White says the recitation is :

1. To test the pupil's knowledge.
2. To test the pupil's acquired mental power.
3. To test the pupil's skill in school-room arts.

In studying these aims it is to be noted that he uses the term recitation in its strict etymological sense. To him it is simply a testing or examining exercise. The work of actual instruction he assigns to another exercise which he calls the lesson.

Ogden enumerates four specific aims for the recitation :

1. To test preparation.
2. To aid in a more thorough understanding of the subject matter.
3. To cultivate memory.
4. To cultivate the power of expression.

These aims somewhat enlarge the literal boundaries of the term. They sweep over its etymological limitations and include in it the actual instruction necessary to a thorough comprehension of the subject matter.

Putnam suggests that the recitation has two great aims :

1. Instruction and testing on the part of the teacher.
2. Learning and reciting on the part of the child.

He places instruction and learning first, and thus shatters the partition between the recitation and the lesson, including the latter as part of the former. He uses the term recitation in a general, not a literal sense.

Dr. Swett is more generous in designating the aims of the recitation. He divides them into two classes that may be termed major and minor aims. The main objects, he says, are :

1. To impart instruction.
2. To give mental training to the child.

The minor purposes, he adds, are :

1. To induce study.
2. To test preparation.
3. To cultivate expression.
4. To correct errors.
5. To awaken inquiry.
6. To form habits of attention, readiness, and self-possession.

This is both a classification and an enumeration of aims, and is based not upon the etymological, but rather upon the general meaning of the term.

Fitch sums up the objects of the recitation as follows :

1. To find out what the pupil knows, to prepare him for instruction.
2. To discover his misconceptions and difficulties.
3. To secure the activity of his mind, and his full co-operation.
4. To test the result and outcome of what you have taught.
5. To determine the pupil's readiness or ability to go on.

6. To test yourself as a teacher.

Sabin says a recitation should do four things for the pupil :

1. It should determine his knowledge as obtained from the book used in class.

2. It should be the means of making clear to him points which need explanation.

3. It should convey to him information not in the book.

4. It should afford him the medium of measuring himself with his fellows.

Dr. Harris sweeps the field with a master's eye. To him its content and its limitations are clearly defined. He, too, uses the term in its general sense, and within its boundaries he finds ample room for the following aims :

1. To draw out each pupil's view on the subject.

2. To test the crudeness or thoroughness of grasp of the subject.

3. To correct his ideas by the greater comprehensiveness of others in his class.

4. To arouse and stimulate a new method of study in the next lesson.

5. To cultivate the closest habits of attention.

6. To bring into full play the powers of numbers engaged upon the same thought.

7. To bring into play the teacher's highest powers.

8. To supplement by stronger force what the pupil gives.

9. To arouse self-activity, power of independent research, acute, critical insight, to be obtained only by contact with one's fellows striving for the same goal.

10. To initiate the student into the great secrets of combination with his fellows.

11. To help the struggling boy or girl to ascend above his idiosyncrasies and achieve the universal form.

12. To learn to suppress the merely subjective, and how to square his views with what is objective and universal.

These are the main objects of the recitation. They include almost every possible aim and are sufficiently clear and comprehensive for all ordinary class work. Within the boundary of these aims the teacher will find some specific end to be attained in each exercise.

The architect sees from the beginning not only the finished product of his work, but every part of it in the most minute detail. He is therefore able to guide the workmen at every point and in every part of its construction. So the teacher must see the end not only from the beginning, but from every stage of the work, as he approaches that end. Then, and then only, may he escape failure, guard against waste, and be able to organize and guide the means that will result in success. For purpose precedes successful effort as the eye precedes the hand. And all effort without purpose is blind. It lacks unity, dissipates energy, fails to recognize and organize the necessary means, and thus leads the way by the shortest route to failure.

TOPICAL OUTLINE

I.—AIMS OF THE RECITATION DISCUSSED.

1. Aim is vital.
2. Aim saves time.
3. Aim conserves energy.
4. Aim determines the means.
5. Aim tests the means.
6. Aim guides the process.
7. Aim unifies effort.
8. Aim is essential to success.
9. Aim encourages effort.
10. Aim is as important as effort.

II.—AIMS ENUMERATED.

1. By White.

- (a) To test knowledge.
- (b) To test power.
- (c) To test skill.

2. By Ogden.

- (a) To test preparation.
- (b) To aid in comprehending the subject matter.
- (c) To cultivate the memory.
- (d) To cultivate the power of expression.

3. By Putnam.

- (a) Instructing and testing on the part of the teacher.
- (b) Learning and reciting on the part of the pupil.

4. By Swett.

(a) Major aims.

- 1. To instruct the child.
- 2. To train the child.

(b) Minor aims.

- 1. To induce study.
- 2. To test preparation.
- 3. To cultivate expression.
- 4. To correct errors.
- 5. To awaken inquiry.
- 6. To form habits of attention and self-possession.

5. By Fitch.

- (a) To test knowledge and prepare the child for instruction.
- (b) To discover errors and difficulties.
- (c) To arouse mental activity and encourage co-operation.
- (d) To test what was taught.
- (e) To test the power of the teacher.

6. By Sabin.

- (a) To test the pupil's knowledge.
- (b) To make clear to him difficult points.
- (c) To instruct him.
- (d) To measure himself with others.

7. By Harris.

- (a) To test the pupil's view of the subject.
- (b) To test the pupil's grasp of the subject.
- (c) To correct his ideas by the greater comprehensiveness of others.
- (d) To stimulate and direct study.
- (e) To cultivate habits of attention.
- (f) To develop class co-operation in thought.
- (g) To supplement what the pupil knows.
- (h) To bring into full play the teacher's higher powers.
- (i) To arouse self-activity and the power of independent research.
- (j) To initiate the student into the great secrets of combination with his fellows.
- (k) To raise the pupil above individual idiosyncrasies.
- (l) To suppress what is merely subjective, and to see what is objective and universal.

PART I

CHAPTER III

ESSENTIALS OF THE RECITATION

Where our interest lies, there our thoughts constantly fly.

COLFAX

Attention is the first requisite for making progress in the acquirement of knowledge.

G. CRABB

By a strange paradox, men are taught by monotony as well as by newness.

HILLIS

Attention to the mind is the natural prayer that we make to interior truth, that we may discover it.

MALEBRANCHE

Attention is possible only on two conditions, that the child shall have something to pay attention *with* and something to pay attention *to*.

B. A. HINSDALE

Attention is the stuff that memory is made of, and memory is accumulated genius.

LOWELL

Utility is the test of excellence.

SOLON

Man was created to utilize everything.

DUMAS

CHAPTER III

ESSENTIALS OF THE RECITATION

Interest is a strong motive power.—BURLEIGH.

IN the successful operation of any process, certain conditions, vital in the relation they sustain to its success, must be fulfilled. The process may be conscious or unconscious, self-directive or guided by external influences, but the law remains the same. The essentials must be present or the process will fail. Growth demands nutrition, combustion requires oxygen, and reproduction is impossible without life.

So it is with the recitation. There are certain conditions under which it must proceed that are vital in themselves and fundamental in the relation they sustain to its success. With these conditions present, the recitation invites success; without them, it guarantees failure. Learning is the final test of teaching, and no teacher really teaches except when somebody learns. Without the essentials the work may proceed and seemingly succeed, but, if nobody acquires knowledge, power, or skill, the time and energy devoted to the recitation are simply wasted.

What, then, are the essential conditions under which individual or class instruction may proceed with hope of success? Or, rather, what conditions are essential to the learning process?

The mind acquires a knowledge of the thing it inves-

tigates. The extent of the knowledge is determined by the character and the extent of the investigation.

But the mind will not examine or investigate to any extent the thing that does not interest it. Hence *interest* is *the first essential* of the learning process. The mind alert, because of a present interest, examines willingly and learns rapidly.

Interest can scarcely be regarded as an active attitude of the mind. It is rather a pleasing, enjoyable, gratifying condition arising in it, because of the contemplation of some agreeable fact. But, in the eager desire to know, manifested in the inborn curiosity of children, the mind assumes a more positive and active attitude in which it looks, longs, listens, and strives to grasp and know the thing that interests it. This active, out-reaching attitude of the mind is *attention, the second essential* condition of the learning process.

Interest is the feeling of pleasure excited in the mind by the attractive features of the thing it contemplates. Attention is the effort of the mind to know more of the thing that interests it.

The former to some extent is the basis of the latter, and the latter may be regarded as the outgrowth of the former. But they are two separate conditions, each important in its place, and both essential to individual or class instruction.

I.—INTEREST.

The interest the child has in a presentation is either natural or acquired. The former grows out of some inherent quality in the subject matter that makes it attractive, and its contemplation and consideration pleasurable to him. The latter is the interest acquired in it by reason

of its surroundings. The source of natural interest is the thing itself, or what it suggests; the source of acquired interest is the thing in its relation to the things around it. Beautiful things are attractive, regardless of their surroundings, but things less attractive need the charm of background and environment to arouse our interest.

If the children have this natural interest in a lesson,—that is, if they are aroused, attracted, and led to examine its subject matter because of the feelings of pleasure and gratification they find in it,—the problems of class management and class instruction are robbed of much of their difficulty; for it is an easy matter to teach all who are eager and anxious to learn.

But the difficult problem—the one that demands the greatest skill and the solution of which is awarded the highest honor—is how to invest that which is dry and uninteresting with those qualities that will make it attractive and its contemplation pleasant to the child.

Truth is like a diamond. It has many sides. And there is always one side that flashes and reflects the qualities that are pleasurable to the child. All phases of it, however, are not of equal attractive power, and it is the business of the teacher to turn the attractive side of the subject toward him, and thereby give him an acquired interest in it. How may this be done?

The Flash of
the beautiful.

A child may be led to acquire an interest in a subject,—(1) by seeing the old in the new; (2) by seeing the new in the old; and (3) by seeing the utility of the new.

1. The Old in the New. A pupil may be led to acquire an interest in a new subject by seeing something

old in it. A child among strangers is greatly interested in seeing the face of his mother, or of some person well known. A traveller in a foreign land is greatly interested in meeting a friend from home. So familiar truths, found in the midst of a new subject, naturally interest the child.

The study of that which is familiar to the child—the thing he knows all about—becomes very monotonous and consequently destructive to interest. So, also, he cares very little for that which is entirely new, and of which he knows nothing. But he is always interested in seeing the old in the new,—the thing that is familiar in the midst of that which is novel.

All truth is related. This is a wise regulation. For it is impossible to get a truth into the mind unless it has a store of similar knowledge, or related facts, with which to examine and interpret the new thing. To learn is to see the relation between the known and the unknown, and the moment these relations are seen, the unknown becomes the known. This is the natural law of teaching, and, because it is nature's plan, it is the easiest way to invest that which is dry and new with acquired interest.

An important application of this law is the study of lessons through present interests. Some subjects naturally unattractive become most interesting by reason of existing conditions and transpiring events. For instance, the history and geography of Russia and Japan, and the civilization of each, acquired great interest during the war between them. Likewise the method of electing a President under our Constitution becomes a most attractive study during the campaign and at the time of the inauguration. An earthquake in some part of the world, that has

Approaching
Lessons
through Use
of Present
Interests.

wrought great destruction to life and property, lends interest to the study of earthquakes generally. In short, passing events and existing conditions may be made the medium through which an absorbing interest may be acquired in the study of many topics in history, civics, geography, and physiology. And it is needless to add, that the most opportune time to study them is when they are invested with living interest.

In acquiring a knowledge of a new and unknown subject, then, the law of acquired interest and the law of mental acquisition demand that the approach be made from the stand-point of the known, from the relation which the old bears to the new; just as you acquire a knowledge of a strange city from some familiar spot, such as the station where you entered it, or the hotel where you are stopping.

2. *The New in the Old.* A pupil may be led to acquire an interest in an old, threadbare subject by seeing something new in it. Thackeray says, "Novelty has charms that our minds can hardly withstand." This is more than a mere fiction, it is a great fact. For novelty is one of the greatest avenues to acquired interest.

The child is just as much interested in seeing the visitor who comes into the home as he is in seeing the familiar face among strangers. A knowledge of cube root gives acquired interest to a review of cubic measure, because the child sees the new in the old and notices their reciprocal relation. Thus a knowledge of a new subject like geometry lends acquired interest to mensuration, because the new throws light upon the old, and the mutual relations of each to the other are grasped.

Monotony destroys interest, but change inspires it. We scarcely hear the ticking of the clock, but we notice

at once the striking of the hour, because striking is a change from the monotony of ticking. The contemplation of old and familiar truth is very tiresome and monotonous and destructive to interest, but the discovery of something new in it affords relief and inspires new interest, because it is a change. The mind cannot remain long in its examination of that which is old. It must have some change. It naturally seeks that which is new, and if the teacher cannot point it out, the interest flags, and some irrelevant idea that is new leads the mind away from the point at issue.

The child, then, may be led to acquire an interest in a subject by recognizing the old in the new, the new in the old, and by noticing their mutual relations. Skilful teaching points out these relations, and thus invests that which is uninviting, and perhaps repellent, with acquired interest. Indeed, good teaching consists very largely in pointing out the relations of the old to the new and of the new to the old. And learning is the act of noticing and grasping these relations, of making the novel into the familiar, of interpreting the new with the body of related truth already in the mind, and of working over both old and new into a body of newly organized truth by the process that we call assimilation.

3. **Utility.** In the higher grades of the elementary school and in the secondary school utility may be made the medium through which the child may acquire an interest in a subject either old or new. When striving for a definite end we acquire an interest in anything that will aid us in reaching that end. Byron, on leaving college, cried out, like a slave released from bondage, "Then farewell, Horace, whom I hated so!" But the poet studied Latin and had a good knowledge

of it, not because he naturally liked the study, but because it would aid in his struggle to realize the literary ideals his budding genius was forcing upon him. Many a boy may acquire an interest in mathematical studies, not because he naturally likes them, but because they are necessary to a course in engineering, the ultimate goal toward which he is moving. Likewise a girl may acquire an interest in the study of stenography, not because the study is inviting to her, but because it will make her self-supporting. So utility may be made an important factor in acquired interest. "Utility," says Flagg, "is the watchword of modern times." Knowledge is more than a mere possession; it is also the instrument of progress, and utility holds as permanent place in mental as in material things.

Utility the
Watchword
of Modern
Times.

The main avenues, then, to acquire interest in a subject are through the old in the new, the new in the old, and their mutual relations, and through the factor of utility. And the wise teacher will use all of them, because he knows that interest, either natural or acquired, is absolutely necessary to success in the recitation.

II.—ATTENTION.

The second essential of a good recitation is attention. It is the tree of which interest is the root. The mind cannot receive truth until it first reaches out to grasp it. It cannot be fed until the sensation of hunger opens the mouth. It will not drink until thirst creates the desire; and this grasping, hungering, thirsting attitude of the mind, in which it is eager and anxious to receive, and through which it reaches out to get what the teacher offers, we call attention.

Attention is absolutely indispensable. McLellan says, "No amount of presentation, however skilful ; no amount of repetition, however persistent ; no amount of explanation, however clear, is of any avail, unless the child's attention, the one condition of learning that cannot be dispensed with, is secured." A blind man cannot perceive colors ; and it is just as impossible to make a subject clear and luminous to a child when inattention has closed his mental eye.

Attention simply means that the child's mind is noticing and discovering relations,—learning,—that it is grappling with some phase of the subject matter, that its mental machinery has been started by the material of the lesson and is in actual operation. On the other hand, inattention means that the mind is away on a journey, that all connection between it and the subject matter has ceased, and that as long as it continues the teacher might as well be in Europe and the child in Africa as in the class-room so far as the progress of the pupil is concerned.

The loss of attention indicates that some interest more enticing than that which springs from the lesson, some association more solicitous than that which arises out of the subject matter, some relation more inviting than the one the teacher is presenting, has led the learner's mind away from the point at issue. It may also mean that the brain-cells have been consumed to the last fibre, and that the child's reservoirs of mental energy are exhausted. In any case it is nature's notice to the teacher either to make the recitation more interesting or to bring it to a close.

The degree of attention a teacher may expect in a recitation, according to Sully, is determined by two conditions :

1. The quantity of nervous energy disposable at the time.

2. The strength of the stimulus which excites the attention.

If a child is strong and vigorous, with a superabundance of nervous energy, a fair degree of attention may be aroused even by a feeble stimulus. But, if from any cause the reservoirs of his vitality are drained, a stronger stimulus will be required. It is obvious, then, that there are some occasions when it is very difficult to secure a high degree of attention and to arouse the mind to a high degree of receptivity.

1. When pupils are crowded into overheated and poorly ventilated rooms, and are thus deprived of a sufficient amount of oxygen to sustain vigorous mental action.

2. When the recitation occurs late in the day and the pupil's stock of mental energy is somewhat exhausted.

3. When the recitation occurs immediately after dinner and the vital energies are engaged in digesting the noon meal.

The ability of a teacher is to some extent determined by his power to interest children in the lesson and thus catch and hold their attention. Shakespeare says—

“The crow doth sing as sweetly as the lark
When neither is attended.”

So the poorest teacher is as good as the best if neither has the attention of the learner. The most scathing criticism that can be offered upon a teacher's work is to say that he cannot get and hold the attention of his pupils; for this, in plain English, means that he cannot

teach ; that he is a total failure, because he cannot take the necessary preliminary steps that will carry him forward to the point at which instruction actually begins.

1. **Classes of Teachers with Reference to the Power of Securing Attention.** With reference to the power to secure and control the attention of the pupils, teachers may be divided into two classes : (a) Those who naturally possess the power ; and (b) those who must acquire it.

(a) *Those who naturally possess the power.* Personality is both attractive and commanding. It draws by its presence ; it sways by its power. Leadership always has followers just as the magnet has adhesive particles. And the very presence of a great personality, with an eye that controls, with a voice that charms, with a manner that wins, and with infinite stores of reserve power that may be called into action at any time, easily secures and holds the attention of a class. In "Paradise Lost" Milton gives us a fine picture of this commanding and controlling power of a great personality, when he introduces Beelzebub to make his speech to the great council in Pandemonium. He says :

"With grave
Aspect he rose, and in his rising seemed
A pillar of state ; deep on his front engraven
Deliberation sat, and public care ;
And princely counsel in his face yet shone,
Majestic though in ruin : sage he stood,
With Atlantean shoulders, fit to bear
The weight of mightiest monarchies ; *his look*
Drew audience and attention still as night
Or summer's noontide air, while thus he spake."

It was an easy matter for such a leader with such a personality to gain audience and attention. So many a

teacher, by his eye, his voice, his manner, his attitude, his presence, and by all those qualities that enter into the commanding personality of a leader, attracts and holds the attention almost without effort.

There is some danger that the attention thus secured by a great leader may be artificial, that it may be genuine only in its outward appearance. This personality may rivet attention upon itself rather than upon the subject matter. But after familiarity has to some extent toned down the admiration that always comes when a great leader is first met, the enchantment that charms makes the personality of such a leader an attractive means for aiding and controlling others.

(b) *Those who must acquire the power to gain and hold the attention.* This is by far the most numerous class of teachers, and the practical question with them is how to secure this power. Let us look at the negative side of the question first.

2. **How not to secure Attention.** Attention is the *voluntary* application of the mind to the subject matter of a lesson with a desire to understand it. As Baldwin suggests, it can therefore be secured,—

Not by military requirement.

Not by arbitrary command.

Not by earnest requests for it.

Not by punishment for withholding it.

Not by external rewards.

The springs of interest are within. They are beyond the reach of arbitrary authority. Such methods are employed by mechanical and experimental teachers who lack the insight to locate these springs or the skill to lead the pupils to them. Giving mind to the subject, like giving money to charity, is valuable to the giver only

when it is voluntary. Hence such mechanical efforts fail to secure that for which they strive. The subject, however, is positive, not negative; and the habit of giving attention may be trained by the art of securing it.

3. **How to secure Attention.** James, quoting Mr. Fitch on the art of securing attention, gives the following hints: "The position must be changed; places can be changed. Questions, after being answered singly, may occasionally be answered in concert. Elliptical questions may be asked, the pupils supplying the missing word. The teacher must pounce upon the most listless child and wake him up. The habit of prompt and ready response must be kept up. Recapitulations, illustrations, examples, novelty of order and rupture of routine—all these are means for keeping the attention alive and contributing a little interest to a dull subject."

The methods of securing attention are numerous, but instruction in this difficult art may be reduced to a few important suggestions.

(a) *Secure attention and cultivate the habit of giving it by skilful presentation of the subject matter.* Rembrandt's portraits are characterized by a flood of light thrown upon the features at the spot where the artist aims to focus the gaze. Outside this, everything shades off into obscurity and shadow. Skilful presentation vivifies the uninteresting lesson with interest. It throws a flood of light upon the point at issue, and shades off into obscurity everything irrelevant. It encourages inquiry by directing it, strengthens curiosity by feeding it, and stimulates investigation by rewarding it. It is clear, strong, logical, and to the point, and thus helps to keep sleepy minds awake, slow minds moving, and wandering minds fixed.

1. *Skilful presentation works through interest.* Interest

is the basis of attention. It is that magnetic quality of truth that draws the mind to it. The contemplation of any fact that is interesting gives pleasure to the mind and impels it to further investigation. Interest, then, is the key to attention. It opens the door of the mind through which truth may enter. The mind that is really interested reaches out after the thing that interests it. It craves the truth that invites it, because of the pleasure its contemplation affords and the gratification it gives. Skilful presentation knows this, and therefore studies the secret sources of interest. It creates a desire, and then rewards the grasping mind by giving it what it seeks.

Skilful presentation appeals to the natural curiosity of the child. A desire for new truth precedes instruction; and if this desire is properly aroused, and properly satisfied, it opens the flood-gates of interest and becomes one of the chief sources of attention.

Skilful teaching makes a wise use of stories, anecdotes, incidents, because they help to train the attention by interesting the children. But they must necessarily grow out of and illustrate the subject matter, and thus be an essential part of the lesson.

Then, too, the skilful teacher interests the pupils and trains their attention by being interested himself. Life only can give life, enthusiasm enkindles enthusiasm. Fire warms all who approach it, and zeal communicates itself from soul to soul. Interest is contagious, and soon spreads from teacher to class. The teacher that is all aflame with this magnetic fire will have little trouble in communicating it.

Earnestness as
a Basis of
Interest.

Teaching is not a joke. It is serious business, and those who succeed must be in earnest. It is this

serious earnestness Shakespeare has in mind when he says :

“They say the tongues of dying men
Enforce attention like deep harmony.”

Baxter suggests the same thought in the following lines :

“I preached as never sure to preach again,
And as a dying man to dying men.”

The teacher who is dying professionally and intellectually, as Trumbull suggests, has no rightful place in the ranks of the skilful, and ought to have no place in the school. But the living, growing teacher, with a warm heart, with generous sympathy, with burning zeal, with an inspiring manner, and with serious earnestness, is always desirable. Such earnestness is a great magnet. Its open presence draws ; its secret power attracts the most listless. “Interest is the mother of attention,” and she never fails to train her child. And an earnest teacher, overflowing with a subject in which he has steeped his very soul, and eager in an intense desire to present it to a class, will, under ordinary circumstances, interest the pupils and through it train their attention.

2. *Skilful presentation appeals to the eye as well as to the ear.* Attention is the door through which truth enters the mind. The latch is on the inside, and the eye and the ear are the main latchstrings which the teacher must employ in opening it. Skilful teaching uses both. It knows that ordinary instruction is addressed to the ear, and therefore seizes every opportunity to use maps, charts, objects, and illustrations that appeal to the eye.

3. *Skilful presentation makes a wise use of illustrations.* Instruction must be clear and pointed. Abstract state-

ments and general truths are not easily understood. To make instruction in any field clear to the child, and to give him a comprehensive grasp of the truth, the skilful teacher will necessarily make frequent use of figures, comparisons, and illustrations. But the figures through which the child is shown the desired truth must be transparent, and the illustrations must be luminous. Unless they throw some light into the haze and gloom where the truth under consideration lies concealed from the child, they are worthless. But where illustrations *illustrate*, they encourage the act and strengthen the habit of attention by showing the mind what it seeks.

4. *Skilful presentation works through the laws of acquired interest.* As this is discussed under the head of interest, it is necessary only to mention it here. The child has a natural desire for truth. His curiosity, his inquisitiveness, his eager, restless interest in his environment, are but other manifestations of this desire to know, that is so deeply implanted in his nature. He longs for truth, he must know, he persistently seeks knowledge from the cradle to the grave. And the skilful presentation of a lesson is the greatest means at the teacher's command by which he secures attention and trains in the habit of giving it, because it rewards the mind in the right way and at the right time, and in the largest measure, with the very thing that it naturally seeks. If this natural interest is wanting, the teacher must work through the laws of acquired interest in an effort to make that which is in itself uninviting beautiful and attractive to the child.

(b) *Secure attention and cultivate the habit of giving it by skilful class management.* A good general brings back deserters and makes it difficult for those who would

leave to get away. So skilful class management brings back the mental deserters, and makes it difficult for all who would desert to get away.

1. *Skilful class management favors attention by grouping a class into a small area.* It brings the entire class under the immediate range of the inspiring and controlling power of the teacher's eye. All tendencies to inattention are easily noted, and remedies promptly applied. The class and teacher, thus in close proximity create an atmosphere of sympathy and interest which, breathed by the listless, aids in promoting his attention. The attitude of attention is looking and listening; hence skilful management demands silence and rivets the eyes of the class on the teacher or on the object in which instruction centres. A wide separation of the class in different parts of the room encourages inattention, but a close grouping of the pupils aids in preventing it.

2. *Skilful class management encourages attention by appealing to all the pupils as well as to each.* If questions are asked, each is addressed to the class to arouse, stir, and stimulate each; then one is called upon to answer. Each child is thus made responsible for the entire lesson and for the answers. Each must be ready, because he may be asked to answer at any time. Failure to answer promptly takes the time of the class, and is therefore a crime against it. Inattention becomes a personal disgrace and calls forth the condemnation of the pupils. Skilful management avoids routine questions around the class and questions directed to the individual, either singly or when a pupil stands to answer a dozen at a time, because they are not conducive to class interest and class attention. It avoids all plans that give the pupils an opportunity to send their minds away on a

journey while their bodies remain in class. But by appealing to each and to all, it demands attention and trains the habit of giving it.

3. *Skilful class management favors attention by a wise use of question and suggestion.* The question is the right arm of the teacher's power. It challenges wavering attention, draws it and the deserter back to the point under consideration, directs the mind to the spot where it will be rewarded by what it discovers, and thus gives it renewed power to attend in that direction again. Suggestion is the flashlight thrown across the pathway of investigation just at the point where the child is trying to discover the thing sought. Good class management promotes attention by a skilful use of question and suggestion, and by telling the child at the right time the thing that should be known but which is not of sufficient value to reward him for its discovery by patient investigation.

4. *Skilful management invites attention and trains in the habit of giving it by change and variety.* It avoids monotony and routine because they favor the growth of stupidity. It encourages variety and change because the normal mind is naturally attracted by them. It varies the method from question to topic, from oral to written, from individual to class, and keeps the mind constantly on the alert by flashing fresh truth upon it from unexpected sources, and by surprising it with that which is new and novel and therefore full of interest. A change of position, a change of plan, a change of manner, a change of any kind, tends to arouse the mind, to keep the curiosity active, and to attract attention. Skilful management, by constant change and endless variety, surprises, attracts, interests, and pleases the mind

and thus invites attention and trains in the habit of giving it.

The skilful teacher and the skilful manager always expect attention, and they generally get it. They compel it, not by arbitrary authority, but by a wise use of the natural means that secure it, and the wise regulations that promote it. Their efforts to get it are generally successful, and in turn they never fail to reward the mind that gives it.

4. How to hold the attention when once secured. Skilful presentation and skilful management are the main channels through which the influences operate that secure the attention of pupils. And they are just as helpful in holding it, because they give the mind what its nature demands,—food and exercise.

(a) *Enchain attention by giving the mind food.* The mind is a living, growing organism. As such it demands nourishment, and knowledge is the staff of its life. Facts and their relations are the necessary food upon which it feeds. The teacher who would enchain attention must reward the mind with the natural nutriment its expanding life requires. In the mart of truth you cannot get something for nothing any more than in the mart of business. The mind that gives attention must have its reward in that which feeds it. And that food must be crisp and fresh. The teacher who thinks in the class-room, who warms the mental action of his pupils with hot thought fresh from a glowing mind will be far more successful than the one who deals out glittering generalities that have long since lost their edge. The recitation should be a birthplace for living thought, not a morgue filled with dead thought. The real teacher is a fountain, not a tank.

Drinking from
a Fountain
not a Tank.

He holds the attention by giving living bread and living water.

(b) *Enchain attention by giving the mind suitable exercise.* Mind and body are mysteriously linked together. Exercise is as much the law of mental as it is of physical development. The normal mind cannot pause even for a moment without wandering. It must move. Hence exercise is as essential to its natural growth as food. The latter really occasions the former, and yet it is perhaps wise to regard them as separate requirements of mental growth. For it is possible to surfeit the mind with food in such a way as to call forth only feeble action instead of stimulating it to vigorous thought. To gain attention is simply to start this mental action; and to hold it is to make this action continuous by keeping the mind actively engaged in noticing and discovering relations as it moves from point to point.

The speaker who holds the attention of an audience gives his hearers something to do. They think with him, or rather after him from point to point, passing judgment upon his utterances, and assenting to, or dissenting from, his conclusions. He keeps their minds so busy in noticing and discovering the relations he points out, as the current of thought sweeps from point to related point, that they have no time to wander away after inviting solicitations into irrelevant fields. So the current of thought in a recitation must be kept moving briskly. The alert mind, that is constantly discovering, comparing, and concluding, has no time to spare in wandering away. The speaker who packs his address with rightly related thought, and who delivers it in a clear and forcible manner at a rate that keeps the minds of his audience busy, will in all probability be rewarded with

their close attention, because he rewards that attention by giving what it naturally seeks,—food and exercise.

Food and
Exercise.

So the teacher who presents the related points in a subject clearly, forcibly, and briskly to his pupils will in all probability be rewarded by their close attention, because he rewards them with the mental food and that progression of thought which the normal mind demands.

A recitation may be successful, or only partly so. It may be strong at some points and weak at others. But if it lacks interest and attention on the part of the pupils, it is an absolute failure at every point and has no redeeming quality whatever, because it is without the essential conditions that make instruction possible.

TOPICAL OUTLINE

ESSENTIALS OF THE RECITATION

I.—INTEREST.

1. Natural.
2. Acquired—Interest is acquired in a subject.
 - (a) By seeing the old in the midst of the new.
 - (b) By seeing the new in the midst of the old.
 - (c) By seeing the utility of the new.

II.—ATTENTION.

1. Classes of teachers with reference to the power to secure it.
 - (a) Those who naturally possess the qualities that secure it.
 - (b) Those who must acquire them.
2. How not to secure attention.
 - (a) Not by military requirement.
 - (b) Not by arbitrary command.
 - (c) Not by earnest requests for it.
 - (d) Not by punishment for withholding it.
 - (e) Not by external rewards.

3. How to secure attention.

(a) By skilful presentation of the subject matter.

1. Skilful presentation works through interest.
2. Skilful presentation appeals to the eye as well as to the ear.
3. Skilful presentation uses illustrations.
4. Skilful presentation works through the laws of acquired interest.

(b) By skilful class management.

1. Skilful management groups the class into small area.
2. Skilful management appeals to all as well as to each pupil.
3. Skilful management makes wise use of question and suggestion.
4. Skilful management makes wise use of variety and change.

4. How to hold the attention when once secured.

(a) Enchain it by giving it mental food.

(b) Enchain it by giving it appropriate exercise.



PART I

CHAPTER IV

PREPARATION FOR THE RECITATION;

or,

THE ART OF STUDY

Study is creative power.

LILIENTHAL

Teach the pupil the art of study, and everything besides becomes easy to him. But to do this you must sometimes study *with* him, but not *for* him.

SABIN

A well-made head is better than a head well-filled.

MICHEL MONTAIGNE

You may have a good mind, a sound judgment, a vivid imagination, or a wide reach of thought and view, but you can never become distinguished without severe application.

J. TODD

Study opens the treasure-house of antiquity.

ASHMOLE

I will not be hindered from prosecuting my studies by all the gold in the world.

ERASMUS

CHAPTER IV

PREPARATION FOR THE RECITATION; OR, THE ART OF STUDY

The three foundations of learning are seeing much, suffering much, and studying much.—CATHERALL.

“THINKING educates; nothing else does.” Teachers, schools, recitations, and books are valuable only as they stimulate and direct mental effort. The child may acquire some elemental knowledge through observation and attention almost without effort, but it is thought, and thought only, that really educates.

Power is always acquired. It cannot be inherited or purchased, but is always the result of mental effort.

To study is to think. It, therefore, educates. Through it the child may acquire both knowledge and power; and the extent of his study is the most important factor in determining the extent of his acquisition. You cannot get something for nothing in the world of mind any more than you can in the world of money. The child who makes a vigorous and extended effort in study may not acquire as much as his talented companion, who comes to his task with inherited tendencies toward culture, and with a superior quality of brain fibre; but an extended and vigorous effort will always give him larger returns than a short, feeble one. Study, then, may be regarded as one of the chief causes, and one of the safest measures of a student's ability.

Study is not a lost art. It is, however, unpopular and somewhat neglected in some schools. The enlarged curriculum of the elementary school, and the short period of

time in which the work must be done make the problem of study both important and difficult. The age demands of the child the mastery of a few subjects and a knowledge of many. Neither alone is sufficient. As a student his work must be both extensive and intensive. It is so easy to give the child a superficial knowledge of many things, and so difficult to make him master of a few, that superficiality rather than intensity is likely to be the chief characteristic of his habits of study. This end must be carefully avoided; for vigorous effort and intense study are the qualities that give the highest degree of power.

I.—THE POSSIBILITY OF STUDY.

Before proceeding to discuss this subject, it seems wise to state a few fundamental facts that make study possible.

1. **The Unity of Truth.** All truth is a unit. Every fact is related, either intimately or remotely, to every other fact. The universe is a bundle of relations. It is also a unity of unities. Groups of facts closely related, and bound together by laws and principles, constitute a science. Each science has its own unity, and yet it is only a part of that greater unity that runs through the realm of truth, binding all into one complete whole. Through the powers of analysis and synthesis human investigation has subdivided this great unity and constructed minor ones of intimately related knowledge. The number of sciences are multiplying, and the possibilities in this line are boundless. The universe of truth stands as a challenge to human investigation. It is the infinite, unsolved problem of the ages. Each new discovery suggests the possibilities of others, and of minor unities whose principles are yet

Possibility of
New Sciences.

unknown and whose laws are yet to be formulated. But every advance in human knowledge, and every step in human progress, only testify anew to the infinity and the unity of the world of truth.

2. **The Mind may know these Relations.** The mind was made for truth. It seeks its relations as the eye seeks the light. It has the inherent power to discover and understand them. To know is to discover, to interpret these relations and combine them into new unities. The unity of truth and the mind's capacity to know are complementary. Each exists for the other. The one offers what the other seeks. It is evident that the finite mind can never fully comprehend the infinity of truth; but it is equally evident that it can discover and know some of its relations. Indeed the greatest enjoyment and the chief employment of man are found in the exercise of this inherent power of the mind to seek, to discover, and to understand.

3. **Some of these Relations may be seen and known without a Conscious Effort.** Some knowledge lies on the surface of truth. It reveals itself to the mind without a conscious effort. Early in life the child acquires a stock of these relations. Observation gathers unconsciously many simple facts, experience furnishes many more, and intuition supplies a vast amount of elementary knowledge. We work with the power we have, and the mental store thus accumulated is the student's capital stock with which he begins business, and which he uses in the quest for those deeper truths that can be found and comprehended only by a long and vigorous self-directed effort.

4. **The Possibility of Study.** The unity of truth, the capacity of the mind to know, and the accumulated store

of primary relations thus acquired, are very important. They make study, the self-directed effort of the mind to know, possible. If the unknown realm of truth is a unity of relations, if the mind has capacity to know them, and has an accumulated stock of similar relations to focus on the unknown in order to give it interpretation and place, the student may proceed at once to discover it, and transform the unknown into the known. "We learn with what we have," and if the mind had no stock with which to begin, the world of relations and the capacity to know them would be of little service. Each of these fundamental facts, standing alone, is practically worthless; but each gives value to the others, and their trinal relations make study, learning, and education possible.

II.—CONDITIONS OF EFFECTIVE STUDY.

The conditions under which a child may do effective work in the preparation of a lesson may be considered under two heads: 1. The physical or objective conditions. 2. The mental or subjective conditions.

1. **The Physical or Objective Conditions.** The physical conditions necessary to effective study are as follows:

- (a) Good bodily health and comfort.
- (b) An abundance of pure air at the normal temperature.
- (c) Freedom from noise and confusion.
- (d) Regular habits and hours for sleep, exercise, and study.

The reasons for these essential conditions are so evident that no discussion of them seems necessary.

2. **Mental or Subjective Conditions.** The subjective conditions are just as important as the objective, and they are by far the most difficult to supply and regulate.

(a) *Interest in the subject.* The first essential subjective condition is interest. All study with young children must spring primarily from the interest they have in the lessons. To study is to examine, to inquire, to investigate; to see, to understand and to classify. But no youthful, untrained student will attend to or investigate a subject that does not incite his interest.

Interest is the magnet that draws the mind into the investigation. It is that inherent quality that truth possesses, the contemplation of which is agreeable and pleasant to the mind. Continuous interest in a lesson is the basis of a continuous application of the mind to it. After the will has been sufficiently developed it may aid in the work of effective study by compelling the mind to investigate subjects less interesting in themselves. But the youthful mind must be attracted towards the lesson by the beauty it sees, or the pleasure it feels in it.

Interest the
Magnet of the
Mind.

Interest is either natural or acquired. Natural interest, as we have seen, is due to that quality of truth which invites the child to examine it, and to the contemplation of that which it believes will reward it with feelings of satisfaction and pleasure. Acquired interest is the interest that the child feels for the moment in a subject naturally dry and uninteresting. It is due to the sudden discovery of some hitherto unseen quality or relation which is sufficient to lead the child to acquire an interest in what was before unattractive and repellent. Both of these interests are important, and together they constitute the first fundamental condition of effective study, because they invite the mind to investigate and reward it by giving it that which pleases and gratifies.

(b) *Ability to study.* Another subjective condition

essential to effective work in the preparation of a lesson is the ability to study. This is both a content and a power. An empty mind cannot acquire. As a content it needs a store of related truth with which to acquire and interpret the new thing. As a power, it must be

Ability to Study
as a Content
and as a Power.

able to concentrate itself upon the thing under consideration to the exclusion of all else. This is the accumulated strength resulting from similar efforts made in the past. The content is the capital stock with which the mind works in the process of study, the power is the ability to apply this stock effectively in the process of knowing. Both are important and unite to form what may be termed the child's ability to study. This subjective condition is absolutely necessary, for it is obvious that the child cannot do that which he has no power to do.

The objective conditions of study are passive, the subjective conditions are active. Both, however, are essential. The one makes the external atmosphere favorable under which the other may act.

III.—OBJECTS OF STUDY.

There are three great objects of study which, in a manner, include all minor ones, and are in themselves sufficient for a complete discussion of the subject.

1. **A Well-Formed Mind.** The chief purpose of study is to develop a well-formed mind. This means the capacity to act with skill, accuracy, and power in any given direction for a given time. It is the strength that comes from systematic effort. It means power to see, power to grasp, power to know, power to act, power to concentrate, power to apply, and power to execute. The well-formed mind sees clearly, thinks profoundly, reasons

accurately, analyzes logically. It compares, classifies, and concludes with ease and facility. It makes observation accurate, memory exact, logic convincing, and appeal forceful.

Discipline is better than knowledge. What a mind can contain is always important, but what it can do is far more vital. Discipline is the result of mental action. This action has two distinct phases: we acquire from without, and express from within. Each gives its corresponding result in increased power, skill, and tendency to act again. Study is the self-directed effort of the mind to acquire and to express. It stirs both these phases of mental action, and thus becomes a valuable means of mental discipline. Knowledge that comes as the result of effort is valuable. But the well-formed mind with its discipline, its skill, and its power, is more valuable, and must be regarded as a most important object of study.

It is to be noted that the discipline that comes from the study of any branch is of two kinds,—special and general. The former is the power to pursue that study or others closely allied to it. The study of algebra, for instance, gives a special power to pursue that study and to grasp closely related mathematical studies. The latter, or general discipline, that comes from the work in any branch, is the general power of the mind that may be applied effectively in any direction.

Special and
General
Discipline.

Modern psychology asserts that this special discipline, resulting from any mental effort, is far in excess of the general. Evidence of this may be found on every hand. An individual rarely excels by reason of superior discipline in more than one or two special fields. Superior attainment in one line is no guarantee of ability in others

unless they are closely allied. If the general discipline was equal to the special, we should find every strong mind in one field equally strong in its power to master others.

The discipline, then, of the well-formed mind is composed not so much of the general ability that comes from the study of a few branches, as from the special power that comes from the study of many. "No study, or no single group of studies," says the late Dr. Hinsdale, "contains the possibilities of a whole education." It is true that the mastery of a few branches is better than a smattering of many; but it is equally true that the mas-

Dr. Hinsdale Quoted. tery of many is better than the mastery of a few. The time was when the regular classical course of the college was regarded as sufficient for all the demands of life. But that day is past. The modern university, in striving to build the well-formed mind, offers instead a large variety of special courses; and the trend in public schools is towards an enlarged and an enriched curriculum. Domestic science and manual training, and indeed every branch that demands recognition in the schools, only emphasizes the importance of a well-formed mind as an aim in all school work, and each is willing to rest its case on what it can contribute to that end.

An important phase of this discipline is the power of self-help. Study is learning through a self-directed effort. This effort may be somewhat imposed at first, but it leads to self-imposed effort, and finally to self-help. Through this effort at self-help the student develops the sturdy virtues of self-reliance, self-respect, and the power of independent thought and action, and steps out into life a "self-poised, self-contained, self-impelled, and self-controlled man." It is this power of self-help Dr. Schaeffer has in mind when he says,

Study leads to
Self-help.

"The aim of the teacher should be to make himself useless."

Study through self-help develops in the individual the power of initiative. This is the power to introduce, to start, to suggest, or to propose. It is the ability to see and to do in a good way what ought to be done without suggestion or direction from others.

This power of initiative includes four factors : insight, suggestion, plan, and execution. It sees conditions, recognizes the needs, and plans and applies the remedy. These elements are of vital importance in the make-up of a man. In medicine they produce the skilful physician ; in law, the forceful attorney ; in governmental affairs, the great statesman ; in war, the great general ; in commerce, the great business man ; and in the field of industry, the great inventor.

The process of study analyzed, reveals almost the identical elements found in initiative. Insight is the power of acute observation, of deep penetration, of accurate discernment, of quick perception, and of correct induction in the mind's effort to know. Study, through the grasp of existing conditions, sees what to do, and how to plan and execute. Indeed, it is simply the effort of the mind to exercise its power of initiative in the act of knowing. And since "we learn to do by doing," study trains this power of initiative by exercising it.

Study is the
Mind
Exercising its
Power of
Initiative in
the Act of
knowing.

Study through self-help not only develops this power of initiative, but it also leads to self-culture. The school's world of truth is a small one. It reveals only the beginnings of knowledge and simply prepares the mind for what it may do. Life is a larger school. The facts of nature, the laws of science, the rules of ethics,

and the principles of human action touch and teach in the most practical way all who will learn. But from the realm of recorded thought, as embedded in books, a realm as vast, as broad, as deep, and as rich as it is inviting, little can be acquired after leaving school except through the power of study. Persistent application is the great instrument of self-culture. Through it the individual may grasp the keys that will open to him the very treasure-house of truth.

It develops self-reliance and self-control, trains the power of initiative, and opens and controls the gateway to self-culture.

Study helped Grote, as he counted pennies in a broker's office, to gather and recount the facts that made a great history. It made Michael Faraday, as he worked as a bookbinder, one of the greatest explorers and discoverers in the realm of science that the world has ever known. It enabled Henry Wilson, as he stretched uppers in a shoe-shop, to fit himself for the vice-presidency of the United States. It prepared Abraham Lincoln, as he split rails and read law, to see the iniquity of slavery and finally to receive the gratitude of an emancipated race and the plaudits of humanity. It trained Hugh Miller, as he trimmed stone in the quarry, to read and write in terms of geology the great story of the rocks. It raised John Bright from the factory floor of a cotton-mill to the front rank of British statesmen. It made Elihu Burrett, as he hammered horseshoes in an old shop in Connecticut, the greatest linguist of his day, perhaps the greatest of all time. And what study has done in the matter of self-help and culture, study can do again. It will enable the clerk in the store, the business man in the office, the farmer in the

Entering
the Domains
of Culture
through Study.

field, and the mechanic at the bench, to master some field of truth, to feed the virtues of self-reliance and self-control, to develop the power of initiative, and to slake self's thirst at the living fountains of culture. And all this discipline and power of self-help are included in what we have designated as the first great object of study,—a well formed mind.

2. A Well-filled Mind. The second object of study is a well-filled mind. Education is not merely a matter of discipline ; it is also a process of nutrition. The mind is an organism that grows. It must, therefore, be fed, and knowledge is its natural and necessary nourishment. Knowledge is as much, though not as important, an object of study as discipline. Knowledge is not power, but rather the necessary material with which the mind exercises itself in the development of power. Neither discipline alone, nor knowledge alone, but rather discipline through knowledge is the immediate aim of study. They are complementary factors, each rendering its best service through the aid of the other. An engine is of little value without fuel ; so the strong mind, to be efficient in its service, needs the fuel of facts. The direct effort of study is knowledge, but the result of that effort is both knowledge and discipline. And while the latter is to be regarded as superior to the former, yet each is nevertheless an important object of study.

3. A Well-rounded Character. Knowledge and discipline are both of vital importance, but the great aim of study is character. Emerson says, "Character is more than intellect. A great soul will be strong to live as well as strong to act." Manhood is better than intelligence, virtue is above culture, goodness is superior to greatness, and the soul outranks the intellect as the gold outranks

the dross. The supreme end of all education is character; and since study is the chief means that contributes to that end, it becomes its highest aim.

But while character is the great aim of study, it comes to the student only in an indirect way. Study is hard work. It develops patience, perseverance, courage, self-reliance and self-respect. It forms habits of industry, system, and regularity. It reveals truth, and the revelation exalts and ennobles. From a contemplation of truth it lifts the mind to a contemplation of the Author of all truth. All this reacts upon the student and helps to clothe him with the sum total of those rich vestments which the world calls character.

Knowledge, discipline, character, are the three educational graces. They constitute the triple crown of man-
 hood, and the trinal unity of an ideal life.
 The true aim of study, like the true aim of
 education, then, is not the enthronement of
 any one of them, but of all, in the individual.

IV.—THE PHILOSOPHY OF STUDY.

1. **The Act of Study Defined.** To learn is to acquire knowledge and through it power and skill. The act of learning may be occasioned either with or without the aid of a teacher. To study is to acquire knowledge and its resultant power without the help of a teacher. The act of studying differs but little from the act of learning. The act of teaching involves the efforts of two persons,—the teacher and the taught. The teacher points out the relations and leads the child to see and comprehend them. The act of study involves the effort of but one person. Unaided the student explores the field of truth, tries to discover its facts and their relations, strives to

understand them and to formulate their laws and principles. If to study is to learn without the aid of a teacher, it is evident that the philosophic act of study is closely allied to that of learning.

2. **The Process of Study Explained.** There are three well-defined stages in the process of learning, corresponding to the laws of mind and the laws of teaching, and each is a distinct stage in the process of study.

(a) *The stage of apprehension.* This is the stage in which the mind of the student surveys the field and grasps in its entirety the thing to be known. In the teaching process it answers to the act of unit-presentation. The mind inspects the thing to be known as a whole, a complete thing, an individual unit, and tries to know it as such. You apprehend when you know a thing as an individual unit. You comprehend it only at a later stage, when you know it in its parts and in their relations, and in the relations it sustains to other things. To apprehend is to perceive. The mental product, then, of this stage of the process is the percept. This percept is the result of a mental view of the thing to be known as a whole. The mind first deals with aggregates, just as the eye sees the whole of an object before it looks for parts and their relations. This stage of perception or apprehension is the stage in which the mind asks for and receives its food in a unified form. It apprehends or knows something of the thing to be known; but it has not yet reached the stage of comprehension that gives a more intimate and complete knowledge of it, when the mind relates the thing to the world of truth of which it is a part.

(b) *The stage of comprehension.* The second stage in the process of study is the stage of comprehension. To

comprehend is to conceive. The mental product, then, of this stage is the concept. In it the mind takes the percepts already apprehended, and proceeds by way of analysis to separate them into their elements and to note their relations. Its knowledge is far more intimate, comprehensive, and complete, because it sees not only facts as units, as in the stage of apprehension, but it also knows them in their parts and relations. Each part stands out from all others as a distinct thing, and yet it is related in some way to the others. The vague, indefinite notion obtained by apprehending a thing in its unity is replaced by a knowledge that is clear, definite, accurate, and detailed, gained by an examination of a small part rather than the unit. The new knowledge thus acquired is united to the mind's previous possessions by the process of assimilation. Thus the mind works up its percepts into concepts by a twofold process. It analyzes to see and understand relations, and then by synthesis proceeds to unitize them.

Comprehension gives Definite Knowledge.

Comprehension is pre-eminently an apperceptive process. It includes interpretation, discrimination, generalization, and assimilation. To apperceive is to think into unity the mind's experiences, new and old. It constructs into organic wholes the mind's data, past and present. In the stage of comprehension the mind not only acquires larger, better, richer stores of related truth, but it reorganizes the old and the new into related wholes.

(c) *The stage of application.* There are two views of knowledge,—the cultural and the practical. The one regards knowledge as an end, the other as a means; the one prizes it as a possession, the other as an instrument;

the one produces the learned man, the other the useful man. The student who accepts the former ideal, who prizes truth only for its cultural value, who seeks profound learning and great erudition simply for the pleasure of knowing, will probably end his investigations with the stage of comprehension. Not so with the utilitarian. He seeks to see how he may apply his acquisitions to the problems of life, and thus become a useful member of society.

The Utilitarian
acquires that
he may apply.

Neither of these two ideals of knowledge is complete in itself. Together they form the complete purpose of acquired truth. Money locked in a vault is safe, but not serviceable; and truth to be practical must be serviceable. Knowledge as an end is not sufficient. Knowledge of grammar is good, but ability to apply that knowledge is far better. A knowledge of the rules and principles of ethics is valuable, but the application of them to human action is far more desirable. The world needs not only educated men, but wise and useful men as well. "The educated man is a tank; the wise man is a spring." The water in the former may be dead and stagnant, but the latter is a living fountain from which an upward marching race must always drink. Human progress is the result, not of knowledge alone, but of knowledge applied, of truth transmuted into wisdom.

In this stage of the process of study the student is not satisfied with mere comprehension. He asks, How may I apply this knowledge to advantage? How may I make it an instrument for good? How may I use my acquired power in the highest interests of the race? How may I become a practical, useful member of society?

Our educational systems are weakest at this point.

They furnish the standards, but give little ability to use them. Thousands have a knowledge of English, but only one in a million can speak with ease, elegance, fluency, force, and accuracy. Practice always lags far behind knowledge. If all men practiced what they preach, if they used what they know, if they applied what they understand, human progress instead of crawling as a snail would soar as an eagle, the race would be lifted to a thousand thrones of almost infinite power, and a thousand royal crowns of character would deck the worthy brows of kingly men and queenly women.

Realf, inspired by the marvellous application of the facts of science to the industries of his native city, sings thus in his Hymn to Pittsburg :

“ I am monarch of all the forges,
 I have solved the riddle of fire.
 The amen of Nature to the good of man
 Cometh at my desire.
 I search with subtle soul of flame
 The heart of the hidden earth ;
 And from under my hammers the prophecies
 Of the miracle years go forth.
 I am swart with the soot of chimneys,
 I drip with the sweat of toil,
 I quell and quench the savage wastes,
 And charm the curse from the soil.
 I fling the bridges across the gulfs
 That separate us from the to be ;
 And I build the roads of the bannered hosts
 Of crowned humanity.”

And this marvellous progress of crowned humanity in every industrial field, as suggested in the poet's song, is

due, not to the apprehension or even the comprehension of knowledge, but rather to its application.

To study is to learn without help. It is a self-learning process. Its keywords are apprehension, comprehension, and application. In the first stage the mind acquires elemental knowledge and works it into percepts; in the second it acquires more accurate and complete knowledge and thinks it into concepts, judgments, and conclusions; in the third it seeks to make its acquisitions practical, valuable, helpful, and useful to the race.

V.—HOW NOT TO STUDY.

1. Do not attempt to Study by Idly reading over the Subject Matter while the Mind is dwelling upon something else. All such efforts will fail. Study is an act of the mind, not of the lips. And yet children often fall into this habit when they try to force the mind to study a lesson that is devoid of interest to them. The eye that tries to examine two objects at once sees neither; so the mind cannot give attention to two things at a time. Attention, the essential condition of study, is partial and all-exclusive. It shuts out everything else in the whole realm of truth, while the mind is investigating the point at issue. And yet the mind may, in a mechanical way, see and say the words of the lesson, and perhaps get a hazy glimpse of an idea occasionally, while it is partially considering some other subject. But such efforts should not be tolerated; for study is the earnest, *undivided* application of the mind to the lesson.

2. Do not attempt to Study by memorizing the Text. Knowledge is a matter of ideas, not words. The evidence of effective study is a comprehension of the text, not the ability to repeat it. Studying and memoriz-

ing are processes essentially different. The one deals with thought, the other with words; the one with content, the other with form; the one uses the mind, the other the memory. Truth dwells not in words except when tented on the printed page, or when it soars from

Words are the
Tents in which
Ideas dwell.

soul to soul on the wings of expression. It enters the human mind as ideas rather than words. The latter are only the empty husks, the transparent cabinets in which one mind ships its ideas to another. And the cabinet must be so transparent to the child that he can see the idea that it conveys. Some truth may occasionally be swallowed whole, casket and gem, but in study it is best, as Bacon suggests, to chew and digest it.

Studying, then, is not memorizing the text. And yet this is what most children attempt to do when a textbook in geography, history, grammar, or physiology is first placed in their hands. So prevalent is this false notion of study that probably eighty per cent. of the children in the elementary school use it and it alone. As a result their stock in trade is words. But the food of the mind is truth, not its empty husks.

VI.—HOW TO STUDY.

Emerson says, "Each mind has its own method." This is true, and yet in a general way all minds are similar and follow to some extent the same general plan; for unity in diversity is just as prominent as diversity in unity in the great realm of nature. And while each mind may have some individual characteristics, yet some general suggestions applicable to all may be offered.

1. Read the Lesson over carefully and thoughtfully as a Whole. Try to discover its Leading Thought.

It is a link in the chain of instruction. It is not only a link but an essential part of the chain. It has, therefore, a unity of its own, and at the same time it is a part of the greater unity that binds together a series of lessons on any subject. Try to find this unity of the subject. See what this link is, what it adds to the chain, and how it is joined to what precedes it.

This examination of the lesson as a unit corresponds somewhat to the stage of apprehension in the learning process. The mind first demands wholes or aggregates before it proceeds to analyze them, and in this examination it looks for them.

2. Concentrate the Mind upon the Lesson with a Purpose of understanding it. Focus the supply of related facts already learned upon the new thing with a determination to interpret it. Bring the analytic power of the mind to bear upon the lesson in an attempt to separate it into parts. This effort tends to make vague knowledge definite. It reveals parts and their relations of similarity and difference, and thus gives the mind more intimate and accurate knowledge, because it has descended from its examination of units to their analytic parts and relations. How to
Examine Study a Lesson.
each part critically with a view of discovering other possible subdivisions and their relations. Truth now stands out clearly, because the mind has contracted the range of its view, and, therefore, intensified its power to see. Unitize closely related truths into groups, and make a rude outline of the lesson facts. Each discovered idea is thus tied to its closest relation and stored for future use.

Scrutinize principles, statements, definitions, and essential parts of the text critically until they are understood.

Examine maps, charts, and other texts that will aid in getting a clear comprehension of the facts. Turn on every side-light possible and strive to see the lesson clearly, accurately, and definitely in its parts and their relations, and in the groups into which you have united them.

This effort at study corresponds in a measure to the stage of comprehension in the learning process. It gives the mind an enlarged stock of intimate and exact knowledge, clearly comprehended and carefully classified, in suitable form for easy retention and ready reproduction.

3. Seek to know what the Fact is, what the Fact means, and what the Fact teaches. Each of these three view-points is important. The first appeals to the memory, the second challenges the understanding, and the third reflects itself in character. The first and second operate through apprehension and comprehension and tend to produce the man of culture and erudition. The second and third act through comprehension and application and tend to produce not only the man of profound learning, but also of wisdom, character, and utility. And not one of these qualities alone, but rather the union of all in the individual, is the true aim of education.

Know what
the Facts are,
what they
mean, and
what they
teach.

The student who would utilize his time and energy to best advantage in study, and at the same time make it contribute to the true end in life, should strive to know the facts of a lesson, to understand them, and to abstract from them the great underlying truths that build into character. To know and to understand are valuable acquisitions; but to draw from any lesson its practical and moral principles, and to incorporate them

into a life of character and usefulness, should be the highest aim of every student.

4. The suggestions of Jacotot, as presented by Mr. Payne, are worthy of careful consideration. They are summed up in the four words: *learn, verify, repeat, and reflect*. It may be wise to glance at each separately.

(a) *Learn*. The first step is to learn the facts of a lesson. The student must grasp them firmly and know them accurately. This does not throw much light on the process of learning, but it emphasizes its importance. The student must know something of the facts, and even if the knowledge is at first general, indefinite, and vague, it will at least serve as a basis for reflection.

Learning the facts in some of the earlier systems of education was scarcely equivalent to knowing them in our phraseology. Learning was then a matter of memorizing rather than knowing. It appealed to the memory rather than to the understanding. But to know the subject matter of a lesson clearly or vaguely, intimately or remotely, is of first importance to every student. To learn in Jacotot's method was the first step, and answers in a general way to the stage of apprehension.

Learning was
Memorizing
in some of the
earlier Systems
of Education.

(b) *Reflect*. The second step is to reflect upon the facts apprehended. Emerson says, "The hardest task in the world is to think." It consumes the vitality and exhausts the energy of both brain and body. And this is the task that the student faces at this point. But it has its rewards, subjective and objective; and its highest reward is mental power. This is what Vincent means when he says "Knowledge is best that comes by hard effort, and it is best because of that effort, and not because of the knowledge." Spurgeon has this difficulty

of effort in mind when he suggests that "He who would have the crow's eggs must climb the tree." Thinking is hard work, but it brings its reward in honor as well as in power, for

"Only thinkers wear the laurels
On the mountain-tops of fame."

This step corresponds, in part at least, to the stage of comprehension in the learning process in which the mind works its percepts into concepts.

(c) *Verify*. Statement may not be fact. Evidence may not be authentic. Testimony may not be correct. It is wise, therefore, to verify statements, to confirm evidence, to substantiate testimony. As the sun dispels the mist, so error vanishes in the presence of verification. And verification to-day on the part of the student is just as important as ever. The eager student will verify truth by referring it to other tests, by consulting higher authorities, by going to original sources, and by the merciless judgment of facts and figures, and the cold logic of analysis and thought. Such substantiation is desirable for many reasons:

1. It establishes the truth.
2. It gives the mind a clearer and broader conception of it.
3. It fixes it more firmly.
4. It makes the mind strong and cautious in investigation.
5. It gives the self-reliance that springs from positive knowledge.
6. It makes truth and reason the standards of judgment.

(d) *Repeat*. The purpose of this in the method under discussion is to fix firmly in the mind its acquisitions.

The early schemes of education unduly emphasized the importance of memory-training to the neglect of the understanding. There is danger to-day of swinging too far to the other extreme. The memory and the understanding are both important. The gun is useless without the ammunition. The engine is helpless without the fuel. The army is hopeless without its provisions. So without memory the strongest mind is useless. Fact is fuel in the engine of thought. And the strong mind must have linked to it a store-house of fact that will supply it at any moment with the exact material needed.

Modern investigation has added much to our knowledge, and modern methods to our efficiency. But they have not rebuked the wisdom of these old-time suggestions. Every thoughtful student learns the facts. If there are doubts, he verifies those facts, and then reflects upon them. He verifies his conclusions with the highest standards at his command, and then strives to fix firmly in his mind both the facts and the conclusions.

VII.—THE UNPREPARED IN THE RECITATION.

In every well-regulated school there will occasionally be found a few pupils who either neglect or refuse to make suitable preparation or for some reason come to the class unprepared. In schools that lack systematic organization, wise management, and skilful instruction, the number often exceeds a few. But, regardless of the number, they may be divided generally into two classes.

1. Those who could prepare, but do not.

2. Those who would prepare, but cannot.

1. Those who could prepare, but do not. This class includes all those pupils who have the necessary power to prepare, but are prevented in some way from exer-

cising it. The essential conditions of study may be wanting, and others may interfere, and thus aid in sending the pupils to the recitation unprepared.

(a) *Poor health may keep a child from study.* There are some instances where a strong mind in a frail body has accomplished great results in the domain of investigation. Pope's mind was vigorous though his body was feeble. Alexander H. Stephens, in spite of physical weakness, was a great power in the Senate; so was Thaddeus Stevens, the great Commoner, in the House. Grant faced death and physical infirmity, while, with peerless power of concentration, he wrote his "Memoirs." But these are exceptions. Such work is possible only with persons highly trained in the art of study, or with those backed by an unbending will. But in the ordinary school, and especially with children, it is idle to expect vigorous mental effort if vigor of body is lacking. Good bodily health, then, is the first requisite of all who would do effective work in the preparation of a lesson.

(b) *The lack of bodily comfort may prevent a student from doing effective work.* He may be too warm or too cold. He may lack a sufficient supply of fresh air to support vigorous mental action. If the preparation is made in the school-room, teachers and directors may regulate the conditions that contribute to bodily comfort. If it is done in the home, it becomes a question for parents. But success in either case will depend almost as much upon the student's bodily comfort as upon his health.

(c) *Noise and confusion may prevent a student from making effective preparation.* Emerson says, "I envy the abstractions of some scholars I have known, who could

sit on a curbstone in State Street, put up their back, and solve their problem . . . All the conditions must be right for my success, slight as that is." And years ago in London, Carlyle, Dickens, Tennyson, and Browning were so annoyed

Environment
a Hindrance
to Study.

in their work that they signed petitions against the license to organ-grinders who visited the streets near their homes to levy blackmail on them. Occasionally one finds a man with well-developed power of concentration whose mind is the ready servant of the will, and who, impelled by an absorbing purpose, can apply himself to the work at hand regardless of unfavorable environment. If the great masters named above could not do so, the individual who can is not easily found. How then can we expect the child, with little power of concentration, and with feeble habits of study, to do good work, unless the external conditions are favorable. His mind must be free from all noise and confusion, and from every cause that will disturb and distract it.

(d) *Lack of time may prevent the pupil from making effective préparation. This may be due to many causes :*

1. The student may be attempting to carry so many branches that he has not sufficient time for preparation in all, and intensity is, therefore, sacrificed for superficiality. This condition exists in some schools. The enlarged curriculum should not be permitted to make impossible demands upon the child.

2. So much time may be given to the work of reciting that there is little time left for preparation. When a class is not making suitable progress, the teacher is likely to extend the time of the recitation in order to give more help. This curtails the time of the study period. This condition is found in upper grammar grades and in high

schools where the teachers have charge of but one class. In grades of two classes, each class has half the time for study.

3. Such social claims may be made upon the child outside the school as will leave him little time for study. This is a matter for the consideration of parents. But in such cases the teacher should endeavor to rescue the child from such social slavery and from the inanity of its parents. Right effort is the only true measure of an education. As you give effort, in the same measure shall you receive power. This is the law, and parents should know it. They should know that the social butterfly is rarely a scholar, not perhaps for lack of ability, but for lack of effort.

Effort as the
Law of
Acquired
Power.

(e) *The absence of regular habits of study and regular hours of sleep and exercise may prevent a pupil from making effective preparation.* Habit is the result of practice, and regularity and system in practice give rapidity to its growth and capacity to its effort. Persistent effort wisely directed at regular intervals soon forms correct and efficient habits of study. Teachers can do much to form this habit by requiring systematic effort at regular periods. Vigor of mind, as we have observed, depends to some extent upon vigor of body, and both are greatly affected by the child's regular hours of sleep and exercise, during which the brain-cells are recharged with vital energy. Regular hours of sleep, exercise, and study are, therefore, conducive to the child's best effort in preparation.

(f) *Then there is a small number who could prepare, but will not.* They seem to live outside the influences that ordinarily lead to effective study. They evade the

tactics of slipshod management and hap-hazard teaching, and occasionally worry the wisest and the best of teachers. The springs of interest seem closed, the desires of ambition are hushed, the electric wires of inspiration are beyond the touch. This class, however, is exceedingly small, and when a teacher has exhausted all his power upon them there is left but two alternatives,—endurance or removal.

There is still some human drudgery in the world. The iron-ribbed giants of steam and of steel have not monopolized everything in their field. They may never do so. And the mere human drudge, the physical engine without intelligence and its inherent powers, Living on the
Crumbs. may always be able, in competition with these steel-clad giants, to eke out a miserable existence in the lowest sub-cellar of the industrial world, and live on the crumbs that fall from the well-laden tables at which he might have occupied a seat.

(g) *There are some pupils who do not prepare because they lack interest in the lesson.* This class may be reached and helped through the *laws of acquired interest*.

2. Those who would prepare, but cannot. This class includes all those pupils who are anxious and willing to study, but who for some reason lack the power. They take the time and make the effort, but accomplish little. Their failure may be due to one of three causes or perhaps to all.

(a) *Some pupils cannot study because they lack the fund of related ideas necessary to the examination and interpretation of the subject matter of the new lesson.* The child learns with what he has. As money earns money, so truth acquires truth. An empty mind cannot acquire. It is entirely passive. It has a great capacity to be filled,

but no power with which to do the work. The pupil, then, whose mind is empty along the line of the subject matter to be known may give time and effort to the act of study, and yet accomplish very little.

(b) *Some pupils cannot study because they lack the power of concentration.* The mind must not only have something with which to acquire and interpret new truth ; it must also be able to take that acquired stock and concentrate it upon the new thing. Concentration is the power of the mind to fix what it has on what it wants. It helps the mind to get what it wants with what it has. Study is the act of knowing through the use of what we know, and through the power that comes from that use. And the pupil who lacks the power to concentrate his mind upon the subject, like the pupil who lacks the fund of similar facts, will get little from the study of a lesson regardless of the time he gives to it and the effort he makes.

(c) *There is also a class of students who would prepare the lessons, but cannot, because the work is too difficult for them.* Their fund of related fact and their power of concentration are insufficient for the work at hand. They are the victims of poor judgment in classification, and the remedy in all such cases is better judgment. Such errors in classification are moral wrongs as well as intellectual blunders. For it is the child's right to be in the class that will give him the highest and best return for his time and effort. More blunders, however, are made in classifying children below rather than above their capacity for a certain grade of work.

The Child's
Right in
Classification.

VIII.—WHAT TO DO WITH THE UNPREPARED.

What to do with the unprepared in the recitation is a problem as difficult as it is important, and as practical as it is difficult. It is not possible to answer this question fully, for some failures are inexplicable. In spite of the best methods of collection there are some losses through delinquents in the business world. So there will possibly be some losses through delinquents in the recitation, even when managed by the most skilful. But they may, and should be reduced to the minimum. Many failures to prepare are the result of causes easily discovered and in some cases easily removed. And the removal of the cause is the fundamental method in many instances of effecting a remedy.

1. With reference to those who could prepare, but do not, two suggestions seem wise :

(a) *Remove the cause.* This is not always easily done. Bodily discomfort, noise and confusion, lack of time, and the absence of regular habits of study and regular hours for sleep and exercise will in time yield to the tact, force, and insight of the wise executive, the resourceful manager, and the efficient teacher.

(b) *Expect preparation. Insist upon it. Demand it. Never teach without it.* Children are good judges of human nature, and many will not work if they can evade it. But in most cases they will yield if it becomes necessary. There is generally only one balky horse among many, and it is often the result of poor management. Under the care of a skilful driver the trouble is frequently removed. So teachers are sometimes to blame if lessons are not prepared. The efforts of the pupils will not rise above the expectations of the teacher.

Social claims and unfavorable conditions yield to the teacher who will not yield to them. Most children will finally do just what the requirements demand.

2. But with reference to that other class who would, but cannot, study, the treatment is very different. If the child lacks the power to study, very little will be accomplished by the reassignment of lessons or by the rigid demands of the teacher. The cause in such case is subjective, not objective, and will therefore be found more difficult of removal. Some general suggestions, however, may be made that will prove helpful.

(a) Let oral instruction in a subject new or difficult precede book study. This is very important at that part of the course where the child is to begin the study of the text in history, geography, grammar, or physiology. This oral instruction gives him a working stock of acquired truth and some power to use it in the examination of the text. This instruction should be based as much as possible upon sense-perception. Ideas precede words. This is the law. The child should see, hear, handle, and examine; that is, get its percepts through the senses until conception is possible without sense-perception. It is difficult for the child to get concepts from the book unless he has a stock of ideas on the same subject. It is wise then, with young children, to have oral instruction pave the way to text-book study. And if the lessons are difficult, and the pupil not well equipped for the art of study, the same rule applies in any grade.

(b) Study the lesson with the pupils during the recitation. The purpose of this is to train them how to study. This may be done with all, or with that part of the class that has failed to make suitable preparation. In the latter

case, the bright pupils who know the lesson because of thorough preparation may be excused and assigned other work. To study the lesson with the delinquents is a valuable exercise. It gives them a body of ideas and fundamental facts about it. It will also develop the power to use the mind and this body of facts in its unaided effort to investigate and know, and thus help to train the children into right habits of study.

(c) *Have frequent study recitations for the express purpose of training the children how to study.* In such cases the pupils have the text open before them. The teacher guides the effort of the class. Questions are asked, and the pupils are directed to that part of the text that either contains or suggests the answer. Suggestions are made, hidden truths are revealed, lines of investigation pointed out, leading thoughts examined, causes investigated, results anticipated, analytic parts discovered, and their similarity and dissimilarity noted,—all with a predetermined aim to train the child in the art of study. Thus under the direction of a skilful teacher children soon discover that to study is not to memorize the text, but rather to discover and understand the points, parts, causes, and their effects. Such a study recitation fails to cover as much ground, perhaps, as a regular one in which all are prepared, but it is almost as valuable in giving a knowledge of the lesson, and more valuable in training in the art of study.

Training the
Child to Study.

(d) *Emphasize the teaching phase of the recitation.* The recitation is the period in which the teacher teaches, tests, or trains. Its results are knowledge, power, and skill. Emphasis may be placed on any one of these processes, and consequently augment the corresponding

result. But the recitation in many instances is permitted to lose its vitalizing power as an instrument of instruction, and to degenerate into a mere examination through which to test the child's preparation. In the teaching process, the mind *gets*; in the examination, it *gives*. The art of study is a process of acquisition. The teaching recitation, therefore, far surpasses the examination in the power to train children in the art of study. And a child's incapacity to study may be due to the fact that he has been examined rather than taught.

Teaching Trains
the Mind to *get*;
Examination,
to *give*.

(e) *Never teach without the attention of the entire class.* A listless pupil is generally a poor student; and he may be a poor student because of his listlessness. Attention is the self-directed effort of the mind to see, to grasp, to know, to understand. The mind that is required, or rather induced, to make that effort day after day in the recitation is rewarded with knowledge, power, and skill, and is thus not only prepared for study, but to some extent trained in the art. Much of the poor preparation on the part of the children has its tap-root in the lack of attention. Complete mental devotion to the subject under consideration, in the recitation always gives power to devote the mind to the work of study. Mental effort gives mental power. Nothing else does. Attention is the act, the effort of the mind to get; it therefore develops the getting power of the mind, the very power used in the art of study.

Attention as
an Effort to
Grasp.

(f) *In the assignment of lessons give hints, outlines, and suggestions that will aid in its preparation.* Assign the work as far as possible so that there is a unity in each lesson. Point out that unity and suggest its parts.

Start the class at the right point, head them in the right direction, show them the objects they are to investigate, and point out the ends for which they are to search. Outlines, indicating certain investigations and asking for certain information, are very helpful. A series of questions put before the children, to which they are to find answers in the text, will greatly aid in the work of study.

(g) *Have a study programme with regular hours and periods for work.* Effort leaves a tendency to repeat itself. And systematic effort at regular intervals soon makes this tendency strong and effective. It conserves energy, saves time, develops attention, strengthens self-determination, and trains the will through the determined execution of a definite purpose. All this aids in forming habits of study by giving the mind power to act firmly, regularly, and effectively in a given direction.

Regularity as
the Basis of
Habit.

If possible, during this period, the teacher should give any special aid an individual may need. The so-called slow pupil may be lacking only in the power to study. He may be unable to think, or may have feeble powers of thought. A hint may start the process of thought, or give vigor to its feebleness. The failure to solve a problem may be due to a failure to grasp and understand its conditions or the principles upon which they rest. The teacher may focus the similar light the pupil possesses upon these conditions and principles, and that which was dark will become luminous to the child, and the problem itself will suggest the solution. The source of power is within, and a little aid on the part of the teacher will greatly help the student in his efforts to utilize it.

Study is the greatest of school-room arts. Its con-

tributions outrank those of any other exercise. It is the shortest, safest, and surest route to culture, attainment, and power. It is at once the price and the measure of each. The desire to study, the capacity for study, and the habit of study are priceless gifts to the race. They generally spring from within, although they may come from without, the school. But regardless of their source, they have made humanity their debtors. They have revealed all knowledge, stated all principles, formulated all laws, constructed all sciences, organized all effort, established all civilizations, annihilated all errors, promulgated all religions, forged the shafts of all progress, and reared to the heavens the eternal towers of revealed truth. How important, then, that the conditions of study be favorable, that the objects of study be definite, that the philosophy of study be clear, that the habits of study be strong, and that the suggestions about study be helpful! And to contribute to these ends has been the whole aim and end of this lecture.

The Results
of Study.

TOPICAL OUTLINE

THE ART OF STUDY

I.—POSSIBILITY OF STUDY.

1. The unity of mind.
2. The capacity to know.
3. The working content of the mind.
4. The possibility of study.

II.—CONDITIONS OF STUDY.

1. Physical or objective.
 - (a) Bodily health and comfort.
 - (b) Abundance of pure air at a normal temperature.
 - (c) Freedom from noise and confusion.
 - (d) Regular hours for study, sleep, and exercise.

2. Mental or subjective.
 - (a) Interest in the lesson.
 - (b) Ability to study.
 1. As a store of related facts.
 2. As the power to concentrate.

III.—OBJECTS OF STUDY.

1. A well-formed mind.
2. A well-filled mind.
3. A well-rounded character.

IV.—THE PHILOSOPHY OF STUDY.

1. The act of study defined.
2. The process of study explained.
 - (a) The stage of apprehension.
 - (b) The stage of comprehension.
 - (c) The stage of application.

V.—HOW NOT TO STUDY.

1. Not by idly reading the lesson.
2. Not by memorizing it.

VI.—HOW TO STUDY.

1. Read the lesson carefully as a whole and try to discover its leading thought.
2. Concentrate the mind upon the facts with a view of comprehending them.
3. Try to know what the facts *are*, what they *mean*, and what they *teach*.
4. Note Jacotot's plan.
 - (a) Learn, (b) reflect, (c) verify, (d) repeat.

VII.—THE UNPREPARED IN A RECITATION.

1. Those who could prepare, but do not.
 - (a) Prevented by ill-health.
 - (b) Prevented by bodily discomfort.
 - (c) Prevented by noise and confusion.
 - (d) Prevented by lack of time, due,—
 1. To too many studies.
 2. To a curtailment of study periods.
 3. To social claims.

- (e) Absence of regular hours and habits.
- (f) Those who lack interest.
- (g) Those who will not study.
- 2. Those who would prepare, but cannot.
 - (a) Because of the lack of a fund of related truth.
 - (b) Because of the lack of the power of concentration.
 - (c) Because of errors in classification.

VIII.—WHAT TO DO WITH THE UNPREPARED.

- 1. With those who could prepare, but do not.
 - (a) Remove the cause.
 - (b) Expect preparation.
- 2. With those who would prepare, but cannot.
 - (a) Let oral instruction precede book study.
 - (b) Study the lesson with the pupils during the recitation period.
 - (c) Have frequent study recitations.
 - (d) Emphasize the teaching recitation.
 - (e) Never teach without attention.
 - (f) Give hints and suggestions in assignment of lessons.
 - (g) Have a study programme.

PART II

THE RECITATION CONSIDERED IN ITS PARTS

PART II

CHAPTER I

PARTS OF THE RECITATION

Diligence ensures success.

R. G. PARKER

To assign the lesson in accordance with the ability of the class to acquire, requires judgment, knowledge, and a large share of common sense.

Selected

CHAPTER I

PARTS OF THE RECITATION

The whole is greater than any of its parts.—SELECTED.

WE have studied the recitation in its unity and pointed out what seems to be some of the characteristics that determine its value. We are now to examine it from the analytic standpoint, and, if possible, separate it into the parts that form that unity and make a careful study of each.

Taken in its broadest sense, a recitation is an exercise in which the teacher tests, teaches, or trains, and through which the child acquires knowledge, power, or skill. As such it naturally subdivides itself into three parts:

1. The testing part.
2. The teaching part.
3. The training part.

Teaching, in a sense, is a spiritual process. Any attempt, therefore, to analyze it will be more or less mechanical. But notwithstanding this fact, it may be helpful in our study to regard these divisions as separate and distinct parts, at least in aim and process, and to some extent different in results.

It is well to observe, however, that these parts of the recitation are not always found operating in separate and distinct periods of time that are easily discerned. The teacher may sometimes use a given period for testing, another for teaching, and still another for the work of

training. In such case the process involved is continuous throughout the period. But in other cases one of these processes may displace the others in such rapid succession as to make them seem almost simultaneous. But expertness in teaching demands that the teacher recognize the aim, the content, the limitations, and the results of these three processes, whether they follow in separate periods clearly discernible or displace one another in rapid succession.

These are the three fundamental parts of the recitation, and to them may be added the following, not so important, and yet worthy of a place as a separate division :

4. The assigning part.

By this we mean the assignment of lessons. We prefer to regard this as a separate part, not so much because of its aim or effect, but because it generally occupies a separate period of time.

I.—THE TESTING PART.

This is the part in which the teacher tests the child's preparation, power, or skill. It is a kind of examination. In it the child tells what he knows of the lesson. This includes what he has learned through study and preparation and what he has gathered from every source. The testing may be done through the medium of oral or written expression, and in response to either the question or the topic method. It may occasionally drift over the line and give a little actual instruction, but in practice, regardless of method or plan, it is practically a testing, not a teaching, exercise. If the student is somewhat advanced in the art of study, he may be able to give many, perhaps all, of the facts of the subject matter, to explain their meaning, and even to abstract from them their hidden lessons; but it is

Testing is not
Teaching.

principally a searching process, a kind of examination in which the pupil does little more than state what he knows.

This is an essential part of every recitation, but it is not the only part, nor the most important part. For while it may occasionally impart some knowledge and thus instruct the child, its main purpose is to get rather than to give; to test, rather than to teach; to recite, rather than to think. It is the easy part of the recitation, demanding less ability and less skill on the part of the teacher than the work of instruction. And the danger is that the young, inexperienced teacher mistakes this part for the whole recitation, and thus really never makes a specific effort to teach.

Mistaking the
Part for the
Whole.

The valuable results that come from this part of the recitation may be summarized as follows :

1. It tests the pupil's preparation.
2. It tests the pupil's general knowledge and ability to study.
3. It cultivates the memory.
4. It trains in the art of expression.
5. It gives some skill and mental discipline.
6. It reveals the child's limitations, and thus indicates the points where instruction and drill should begin.

II.—THE TEACHING PART.

The second part of the recitation is the teaching part. As its name implies, it is devoted to the work of instruction. In it the teacher *teaches* and the child *learns*. This is what Dr. White calls giving a lesson. It differs essentially from the examining part. The one tests, the other teaches; the one examines, the other instructs;

the one trains the child to *give*, the other to *get*. In the former the mind delivers what it has discovered; in the latter it discovers what it may deliver.

In this part the purpose is to examine both the known and the unknown. The child is led to see familiar facts more clearly, comprehend them more fully, and think of them more vigorously. This may be done to some extent by the testing process. But the main

Exploring the
Unknown.

purpose is to pass beyond the region of the known, to examine, investigate, and explore the realm of the unknown in fact, and especially in thought. By questions and suggestions the teacher directs the work, but does not do it. He incites interest, points the way, removes irrelevant rubbish, focuses attention on the spot where the discovery in fact or thought is to be made, and flashes as much light as possible into the region of darkness. The aim is to illumine the way and direct the thought, but yet to allow the pupil to do his own thinking and to receive the stimulus and the reward that come as a result of discovery. The child looks and listens. His whole mind, not part of it, is directed to the one thing under consideration. He sees nothing in the universe for the moment but the point at issue. At that point is concentrated all the light and energy of his mind. He examines, analyzes, compares, discovers, and concludes. The mists rise, the fogs scatter,

Transforming
the Unknown
into the
Known.

the light dawns from within, and *the unknown is transformed into the known*. As a result of this the pupil sees new facts, discovers new truths, thinks new thoughts, comprehends new relations, forms new opinions, and reaches new conclusions.

The teaching process is the dominant feature of this

part of the recitation. And it is to be noted that the vital part of that process from the pupil's standpoint is that he be aroused to independent thought. Without this everything else is vain. The supreme duty of the teacher is to stimulate and direct the pupil's thought, to project it toward some specific end, known to him, but as yet unknown to the learner. The point of beginning is some known fact or relation. The child is led to think about it, to compare it with others, to note their similarity or difference, and to arrive at some conclusion about them. In a similar manner other conclusions are reached. These conclusions are in turn examined and compared; their similarities or differences noted, and a new conclusion is reached. Conclusions are the Milestones of Thought. Thus, the child thinks his way from the known into the unknown. His conclusions are the milestones of his progress, the advance guards of his thought, the great circles of mental illumination where darkness is dispelled by light, where the unknown is illuminated and identified by the known. It is thinking that carries the child forward and upward in his work, and conclusions are the periods that mark the completion of acts of thought and separate one from another.

Thinking is hard work, but in the teaching process it is necessary. It fatigues the body and exhausts the brain. But the effort repeated again and again after suitable relaxation gives insight, knowledge, wisdom, strength, logic, power. It is indispensable, even if it is exhausting to both mind and body. For while presentation may be clear; illustration, luminous; suggestion, definite; statement, strong; and argument, convincing, they can accomplish little on the part of the teacher unless the pupil individually is aroused to thought.

Thinking is at once the compass that guides and the boat that carries the child forward toward the desired end. And while the teacher thinks with the child, he must not think for him. The royal prerogative of every child in this part of the recitation is to think. And even if it taxes the brain and tires the body it must not be evaded or neglected, for from the exercise of this prerogative spring the best results to the child.

The aim of the teacher, then, in this part of the recitation is to arouse and to direct the child's thought. This purpose may be accomplished through exposition, definition, explanation, suggestion, and statement. But the leading instrument of the teacher's power is the question. With it he arouses the slumbering faculties, stirs the stagnant energies, and stimulates the dormant activities; by it he sustains the interest, challenges the attention, and opens the very throttle-valves of thought; through it he guides the progress of the investigation, directs the child's mind to the very spot where the new conclusion lies concealed, and at the right moment aids in lifting the veil that hides it. And the teacher's worth is largely determined by his ability to use the question as an instrument of thought and instruction. But whether he uses question or suggestion, the real progress that is made is ever measured by the extent and character of the child's thought.

In this part of the recitation the teacher, or some member of the class, often adds new facts not found in the text, yet closely related to its subject matter. We are told that "telling is not teaching;" and we are so accustomed to accept this old maxim that we scarcely

stop to think about it. Telling in the recitation may or may not be teaching. When the mind, as a passive receptacle, receives truth, telling is not teaching, because the fuel falls upon extinct fires, and there is no responsive action, no interpretation, and no assimilation. But when the testimony is as fuel to a living fire, and results in stimulated action and reflection, then telling is teaching. In the university and the college, in the pulpit and on the platform, the lecture is regarded as a legitimate method of instruction. And while it would be unwise to use telling as a *method* of teaching in the elementary school, it is equally unwise for the teacher never to supplement the text with that related matter which the child should know and which is not of sufficient importance to reward him for individual investigation. Indeed, we get much of our information from testimony,—the testimony of lecturer, preacher, editor, author, and the teacher who fails to add needed information, ignores an important source of truth to the child.

When Telling
is Teaching.

In this part of the recitation, then, the teacher or some pupil adds information that will interest the class and throw light on the lesson. In the testing part the work seldom goes beyond the confines of the text; but in this, lines of thought may be followed to outside sources,—to teacher, to pupil, to other texts, and to higher authorities. The teacher may assign certain questions to individuals, and ask them to post up and report to the class at some future time. In short, reliable information from any source may be added by either teacher or pupil, provided that it is closely related to the subject matter and will contribute to the interest and profit of the class. It is always wise to examine

and discuss this added information, in order that it may be made that kind of telling that is teaching.

The teaching part of the recitation is its most important part. Like the examination it also tests and strains, but it does more :

1. It instructs the child.
2. It gives mental discipline :
 - (a) By verifying fact.
 - (b) By examining testimony.
 - (c) By substantiating evidence.
 - (d) By confirming statement.
 - (e) By comparing relations.
 - (f) By discovering their similarity or difference.
 - (g) By reaching new conclusions.

III.—THE TRAINING PART.

Both the teaching and the testing parts of the recitation to some extent train. But the training they give is insufficient in itself. It must be supplemented by special practice devised for that purpose and directed to that end. This may be done on certain days or on separate occasions, but it is generally done in the recitation, and may be regarded as a legitimate part of it.

This part of the recitation is sometimes called the drill. Its purpose is to deepen impressions, to break or form habit, and to give the child that mental or physical exercise that will result in skill, dexterity, efficiency, and power.

These are not the direct results of instruction. You cannot teach a child skill. It must be acquired by him through *suitable practice*. The aim of every drill, then, is to so exercise the eye, the ear, the hand, the tongue, or the mind, on that *plane*, at that *rate*, and with that

purpose which will result in giving them the ability to do easily, rapidly, and accurately what is required of them. To this end the teacher, in giving a drill, should keep in mind a few fundamental facts.

1. **Drill gives skill through practice.** Practice produces proficiency. This is the basis of all trades, all games, all arts, and the law through the operation of which all skill is acquired. First efforts are always crude and clumsy. They waste both time and energy, but they leave a tendency and an aptitude to repeat themselves. These grow stronger with each successive effort. Each act is easier and more efficient than its predecessor, because of this accumulation of inherited tendency. The nerve tracks, made so laboriously by first efforts, soon become the beaten paths along which impulses and impressions rush with ease and facility. "Practice makes perfect." It gives far better results than the products of earlier efforts, and it gives them at a cost greatly reduced in time and energy. Thus drill gives skill,—that is, the power to do with ease, accuracy, and rapidity what was at first difficult and laborious.

The first Efforts
are Crude and
Clumsy.

2. **Practice must be clear and definite in aim.** Practice alone is not sufficient. Aimless effort is almost useless. Indeed, it is sometimes harmful. It is automatic and mechanical. As such it suppresses the interest it should excite, induces the indifference it should dispel, represses the effort it should encourage, and destroys the attention it should arouse. It is useless because it fails to do what is needed, and harmful because it perpetuates errors instead of removing them.

But clear and definite aim energizes and directs effort. It makes practice both inspiring and efficient. Accord-

ing to Comenius, "We learn to do by doing." This maxim is true when it refers to the general law that drill gives skill. But it is scarcely a sufficient guide for the teacher in this difficult work. McLellan thinks it more appropriate to say, "We learn to do by knowing." This change sheds needed light. A knowledge of what to do and how to do it must always guide the act that is to be efficient. Practice not based upon, and guided by positive, scientific knowledge, is often dangerous. The physician whose practice of medicine is not based upon scientific knowledge is a quack. There must be science back of art to guide it in practice, if that practice is to be safe and efficient.

This is practically the view of Dr. Schaeffer, who shows in *Thinking and Learning to Think* that this maxim is not a principle of education that is universal in its application. He speaks of a young man without a knowledge of medicine who was willing to prescribe for the sick in order to learn the effect of drugs, and who, without a knowledge of surgery, was willing to amputate limbs that he might learn the art. But the people were too wise to give him an opportunity to "learn to do by doing."

The same authority says: "No one in our day would advocate mere blind doing as a means of learning. The maxim must refer to doing guided by an intelligent will. The doing must be guided by thinking that is based upon correct and reliable data or premises."

But the maxim may be examined from another viewpoint. Dr. White regards it as a half truth and adds the other half by saying, "We learn to do by doing under the inspiration and guidance of true ideals." Practice is thus not sufficient in

Schaeffer's
Idea.

White's Idea.

itself. It must be clear and definite in aim. True aims are idealistic. They are more than mere models to guide. They are also dynamos that move to action and magnets that draw. True aims lift, inspire, and guide.

It takes blind practice a long time to become proficient. A boy placed in a blacksmith's shop with all the necessary tools and materials may, without aid, become a crude sort of mechanic, but it will be only after years of wasted time and at the cost of tons of wasted material. His practice must be inspired by clear and definite aim, by models of accuracy and excellence, and guided by scientific knowledge. So the highest degree of skill and efficiency in any school-room art comes from practice that is inspired by definite aims, by models of excellence, and guided by scientific knowledge.

3. Practice must be adapted in Time to the Capability of the Child. Some artists are slow workers, but tediousness is not necessarily a factor in skill. On the contrary, its elements are ease, accuracy, and rapidity. Each of these is of some importance, and none should be neglected. The child who can do a piece of work easily and accurately but very slowly, lacks an important element in skill, and therefore needs drill. The purpose of drill is to secure ease of execution and excellence in result in the shortest possible period of time. To do this, the time element in practice must be carefully watched, and the rate of drill adapted as far as possible to the capability of the child. The child who writes slowly will never become a rapid penman without some accelerated movement in practice. Drill pitched at the right point, and given at a rate that demands accuracy while it reduces the time required toward a minimum, will by and by make

Practice at the
Right Point.

the pupil that is slow in mathematical calculations, rapid.

At what rate then shall the drill be given? No definite answer is possible. The ability and the capability of the child and the characteristics of the exercise must decide. It must not be too rapid for the slow mind nor too slow for the quick one, else it is discouraging to the former and useless to the latter. It should be just rapid enough to allow, not a few, but a large number of pupils to complete the exercise with accuracy and excellence, while it constantly reduces the time element to a minimum. And great care, insight, and judgment are needed on the part of the teacher thus to regulate the drill in time to the capability of the individual or the class.

4. The Practice must be adapted in Degree of Difficulty to the Powers of the Child. Skill is the ability to perceive and to perform, the power to discern and to execute. It therefore implies strength. Now strength comes from struggle, and the extent of the strength is determined by the vigor and the character of the effort. The athlete who always lifts light burdens has little strength for heavy ones.

Great strength cannot be developed by making things easy. The material for practice, then, must be nicely adjusted to the capability of the child, and graded in harmony with the degree of strength the exercise is intended to give. If it is too easy it gives little strength in return, quenches the fires of interest it should kindle, and disgusts the child it should encourage. If it is too difficult it may fatigue to the point of exhaustion the powers it was intended to strengthen, discourage the child it ought to stimulate, and keep him plodding on the race-course where he is expected to run. The prac-

tice, then, that would prepare the child to do difficult things with ease, excellence, accuracy, and rapidity, must be difficult enough to test and develop the needed strength, and yet not so difficult that it is discouraging and dangerous.

5. Practice must be Diligent. Diligence is faithful application to some kind of work that has a strong hold on the feelings. Practice that is idle, indifferent, and careless is of little value. It must be conscious, earnest, inspiring, and careful. It must be pitched at the point that demands the child's best effort. Without this he may write and yet not improve in penmanship; he may say the words of a lesson and not increase his facility to get thought and to give fluent and elegant expression to it. The heart must stand back of the head and the hand, and zeal and desire must give vigor to effort. The drill that is lifeless, automatic, and perfunctory, is useless and degrading. It is the chief stock in trade of poor teaching. But the drill that really trains, that gives ease and excellence, accuracy and rapidity in the largest measure, is always inspired by interest, zeal, earnestness, and by conscious care and fidelity. Roark says, "The rule of first importance in drilling is that the *interested consciousness* of the pupil must be evoked throughout the exercise; mere drill monotony of repetition is not drill. Gain in power and skill is made in the same degree in which—to use Matthew Arnold's fine phrase—" *consciousness permeates the work.*"

The training part of the recitation, then, is the drill. It may occupy a separate period, as a place at the beginning or the close of the recitation. It may operate through the oral, written, or blackboard work in response to either the question or the topic method. But regard-

less of the time, place, or manner of the exercise its chief purpose is to give the child skill. *And skill is always the result of diligent practice, based on scientific knowledge, inspired by right aims, guided by right principles, and graded in time and degree to the capabilities of the child.*

This part of the recitation is much neglected. Few teachers seem to appreciate the training value of the drill, and very few understand how to use it to advantage. As a result, the pupils in our schools lack skill. They know something of penmanship, but they cannot write with ease, excellence and rapidity. They understand something of drawing, but their efforts in the art are clumsy and commonplace. They have some knowledge of grammar, but cannot speak or write with force and accuracy. They comprehend some mathematical principles, but their efforts to apply them in the solution of problems are laboriously slow and distressingly inaccurate. And all these defects, serious as they are, are often due, not so much to lack of instruction, as to the negligence or the imperfections of drill.

The materials for practice in all drills should, as far as possible, be crisp and fresh. Old exercises, examples, and problems which the mind has formerly used and understood are of little value. The problem, for instance, that was solved and comprehended in the preparation is not the best problem for the drill. A new one, similar, yet different in some degree, is far better. The same is true in grammatical drills,—in fact in any drill.

The Material for Drill. In some schools the pupils solve and explain in the recitation the same problems they solved and understood in the preparation of the lesson. They use them again in the drill, notwithstanding the

identical problems were used in the same way two or three times last year. Such a plan is not only uninspiring, but is also, in a large measure, non-productive of the best results that should come from drill. The repetition of some things is necessary, in others it cannot be well avoided. But drill, as far as possible, should use new material. New things are attractive and full of interest to the child. They claim his best efforts; while the use of that which is old and familiar is uninspiring and tends to suppress the zeal and interest so essential in the acquisition of skill.

From this discussion it is evident that the drill occupies an important place in every class-room. It deserves more attention than the test, and is second only to the work of instruction. Its chief advantages may be stated as follows:

1. It trains the memory.
2. It trains in the art of expression.
3. It aids in the formation of habits.
4. It gives skill in the school arts.

To teach, to test, and to train are the fundamental aims of the three corresponding parts of the recitation. They name the process that is dominant in each, and only a word is necessary as to the logical order in which these processes should be used.

It is evident that a pupil must have knowledge before he can be tested in it or trained by it. Consequently with little children, who cannot acquire a knowledge of a lesson by study, the teaching exercise comes first, the drill possibly second, and the test last. This order, however, may be changed, if the knowledge used in the test and the drill was acquired at some former time. But with pupils advanced in the art

The Order of
the Parts.

of study, the teacher may first test preparation, then teach and train, if the new matter is to be the basis of the drill, or train and then teach if formerly acquired matter is to be used. In such cases the test coming first reveals the extent of the pupil's knowledge, and consequently the point at which instruction should begin, as well as the necessity and the scope of the drill.

IV.—THE ASSIGNING PART.

The fourth part of the recitation is that devoted to the assignment of lessons. It is not as important, perhaps, as the others, yet it deserves the careful attention of every teacher. In discussing this subject three prominent points demand consideration :

1. The time to make the assignment.
2. The extent of the assignment.
3. The character of the work to be done in making the assignment.

1. **The time to make the assignment.** What is the proper time to assign a lesson? Two answers may be given to this question. The proper time is either at the beginning or at the close of the recitation. If the pupils are young and cannot use to advantage the art of study, it is wise perhaps to make the assignment at the close of the recitation. The objection to this is that the teacher and pupils are more or less exhausted, and the purpose of the assignment may, therefore, not accomplish to the fullest extent its purpose. The same objection holds if the order is reversed. For if the assignment precedes the teaching exercise, the teacher and pupils are not as fresh and vigorous for the work of instruction as if it came first. With young pupils, then, it

seems best to make the assignment at the close of the recitation.

But with advanced pupils the assignment should be made at the beginning of the recitation. Coming at the close of the period the assignment is likely to be made hastily, in the most perfunctory manner, and with little interest and profit to the pupils. At the beginning, however, it is more likely to receive its full quota of time. The teacher is mentally fresh, keen, and incisive, and the pupils alert and active, ready to seize and use to advantage any suggestions made concerning the new lesson. The assignment is not merely to designate the extent of the next lesson, but to train the pupil in the art of study. And since this art, with advanced pupils, supersedes in importance every other school exercise, the beginning of the recitation is the most opportune time to make the assignment.

There is, however, an objection. If lessons are not well prepared they are often reassigned. And if the assignment is made at the beginning the teacher may not know whether to assign a new lesson or to reassign the old. This is true; and yet it is scarcely a sufficient reason for not making the assignment at the time when it will best accomplish its purpose. And in all such cases the reassignment would simply take its place.

2. The extent of the assignment. What shall be assigned? Many teachers dismiss this question with little consideration, and simply designate so many pages or paragraphs. Every recitation has a definite purpose, and this in a measure will determine the assignment, just as an order for lumber is determined by the use that is to be made of it.

The assignment should be definite. And as far as possible it should be a unit or a group of units. But it should also be a link in the chain of instruction. The unity in a lesson is important. The mind grasps wholes before it analyzes them into parts. And if the lesson assigned has no unity, the pupil's mind is somewhat baffled at the beginning of its work.

The assignment may be a process, a paragraph, a chapter, a topic, or a unitized group of topics. What the link is, how it unites with the preceding one, and how it is to be joined with what is to follow, must be wrought out by the child in the preparation, or by the teacher and the child in the recitation.

3. The character of the work done in making the assignment. What shall the teacher do in making the assignment? The answer to this question is as difficult as it is important.

"Mental effort is important." Nothing else can ever take its place. The teacher, then, who does the work for the child robs him of the vital results that reward effort and of the joy that crowns achievement. The teacher who withholds needed aid swings to the opposite extreme. The question of just how far the teacher shall aid the child is vital and not less important in the assignment than in the teaching exercise. It must always be determined by the capacity of the child and the character of the subject matter. No rule, absolutely positive, is therefore possible.

The whole aim of the assignment is to designate the extent of the lesson, to aid the pupil in its preparation, and to train him in the art of study. Its extent should be made clear and positive. The teacher should arouse

and, if possible, intensify the interest of the class in the subject matter. Its unity may be pointed out and its essential features designated. The Aim of the Assignment.

Attention may be directed to specific aims and to legitimate lines of investigation. Outlines to guide, questions to aid, and suggestive hints to help may be given. Reference books may be named, maps and charts designated, and lines of approach carefully marked out. The battle is not fought at this point, but a preliminary view of the field and the forces is taken for the pupil's benefit.

The pupils are thus started at the right point, and, with their eyes open and their minds alert, are headed in the right direction. They have some clear and definite aims; they are looking for something specific, some particular thing; they are searching for it in the right way and at the right place, so far as this preliminary aid of the teacher can guide them, and they are far more likely to find it, and thus make the study hour more profitable, than if left to themselves.

Such an assignment (*a*) saves time, (*b*) conserves energy, (*c*) encourages the pupils, (*d*) trains in the art of study, and (*e*) leads the way to larger and better results.

It is in full accord with the philosophy of good teaching, which simply points the way, designates the habitation of the desired truth and its relations, aids in their fuller comprehension, but leaves the work of discovery and the joy of achievement to reward the child for his efforts.

To teach, to train, to test, and to assign, then, are the parts of the recitation. They are not always easily discerned as separate exercises operating in separate periods of time, yet they are radically different in aim and in process, and more or less different in their results.

The purpose of each is set forth in the words test, teach, train, and assign. The first aims to examine the child and test his preparation ; as a result it deepens impression and trains in the art of expression. The second aims to instruct the child ; to enlarge and clarify the field of mental vision ; to analyze its contents, discover its relations, and unitize them into synthetic wholes. The result of this to the child is mainly knowledge and discipline. The aim of the third is to train the child through practice and exercise in the ordinary schoolroom arts. The results that come from these drills may be summed up in the word skill. The simple purpose of the fourth part is the assignment of work. And this, if skilfully done, will save time, and to some extent train the child in the art of study.

Thus a recitation, aside from the assignment, is a trinity of processes, and a unity of parts. For these processes, though separate in operation, and these parts, though distinct in aim, are so intimately related, so fundamentally united, so dependently associated, and so skilfully interlaced, as to form a unity that is at once, from a pedagogical point of view, symmetrical, harmonious, and complete.

TOPICAL OUTLINE

PARTS OF THE RECITATION.

I.—THE TESTING PART.

1. It tests preparation.
2. It tests the pupil's general knowledge and his ability to study.
3. It cultivates the memory.
4. It trains in the art of expression.
5. It gives some skill and some discipline.

6. It reveals the child's limitations and indicates the proper field for instruction and drill.

II.—THE TEACHING PART.

1. It instructs the child.
2. It gives mental discipline.
 - (a) By verifying fact.
 - (b) By examining testimony.
 - (c) By substantiating evidence.
 - (d) By confirming statement.
 - (e) By comparing relations.
 - (f) By discovering their similarity or difference.
 - (g) By reaching new conclusions.

III.—THE TRAINING PART.

1. It trains the memory.
2. It trains in the art of expression.
3. It aids in the formation of habits.
4. It gives skill in school arts.
 - (a) Drill through practice gives skill.
 - (b) Practice must be clear and definite in aim.
 - (c) Practice must be adapted in time to the capability of the child.
 - (d) Practice must be adapted in degree of difficulty to the power of the child.
 - (e) Practice must be diligent.

IV.—THE ASSIGNING PART.

1. The time of assignment.
 - (a) At the beginning of the recitation.
 - (b) At the close of the recitation.
2. The extent of the assignment.
 - (a) A unit or a group of units.
3. The character of the work done in the assignment.
 - (a) Hints and suggestions that aid in the preparation and train in the art of study.

4. Results of the assignment.
 - (a) It saves time.
 - (b) It conserves energy.
 - (c) It encourages the pupils.
 - (d) It trains in the art of study.
 - (e) It leads the way to higher and better results.

PART II

CHAPTER II

PREPARATION, THE FIRST FORMAL STEP

Before proceeding upon any plan we should carefully weigh it.

S. MERRILL

Each recitation should begin with a brief review of what has been gone over recently, and close with a "preview" of the next.

ROARK

In all matters, before beginning, diligent preparation should be made.

CICERO

He who is not prepared to-day will be less so to-morrow.

OVID

CHAPTER II

PREPARATION, THE FIRST FORMAL STEP

Preparation is half the battle.—CERVANTES.

WE have seen that the recitation has four parts. If they are not fundamental, they are at least important. And of these the most important is the teaching part. We are now to make a special study of that part, to examine it carefully, to analyze it critically, and, if possible, to obtain a more intimate knowledge of this art of arts.

All notions are either particular or general. The former are percepts, the latter concepts. The first are the result of sense-perception, or they arise out of the examination of some particular fact or relation. The second are the product of mental action, which works up percepts into concepts. Particular notions are the raw materials of knowledge, but general notions are its finished products.

The Raw
Materials of
Knowledge.

All instruction, then, deals with either the one or the other of these notions. Its effort is to give the mind percepts or to elaborate them into higher forms. The first may be called the stage of presentation, the second the stage of generalization. In presentation the mind is engaged chiefly in acquiring particular notions; but in generalization it examines and compares them, abstracts general notions from them, formulates them into definitions, rules, and laws, and then applies them. Generalization is thus a comprehensive term. And for convenience

and clearness in discussion it may be divided into comparison, generalization proper, and application. The first includes abstraction and association ; the second, recapitulation and definition of general truths ; and the third, the application of them.

But there is a stage of work that precedes presentation. The mind must be prepared to receive. An empty mind cannot acquire, it cannot even give attention to the presentation. Acquisition is possible only when the mind has a working capital of related ideas and the power to use them.

Since all truth is related, and every normal mind must acquire some particular notions through sense-perception, every such mind must have at least a small group of ideas related intimately or remotely to the one to be acquired. But, thus supplied, it may have little power to use its content in the work of acquisition. This may be due to many causes. Its related truth may lack that organization which gives it its acquisitive power. It may be unable to concentrate its energies on the new thing. Or the old knowledge which ordinarily grasps and interprets the new may be passive and dormant. Indeed, the great body of knowledge is generally in a dormant condition. Groups of related ideas become active and rush forward into consciousness only when some cause arouses them. This is a wise regulation. The mind can investigate only one thing at a time ; and its numberless groups of related ideas, save only what are needed in the investigation, must remain passive and be banished for the time from consciousness.

Preparation is needed to arouse to acquisitive action that part of the mind's possessions necessary to a proper

The Mind's
working
Capital.

reception of the new presentation. When a ball is thrown to a player, every energy of mind and body is aroused to catch it. Preparation for the ball precedes the reception of it. So preparation of mind in teaching must precede the presentation of the subject matter that the necessary group of related ideas may be aroused, organized, and ready for the work at hand.

Preparation
arouses the
Mind's acquisi-
tive Power.

The art of teaching includes every phase of preparation, acquisition, and generalization. Within its scope, the limits of which are generally so vague and indefinite, are involved numberless processes, both psychological and pedagogical. A discussion of each would lead us far beyond the boundaries of this lecture, out of the practical, and into the realm of speculative thought. Our purpose is rather to discuss the essential processes of the art of teaching as grouped in the five formal steps. These steps are generally designated as follows :

1. Preparation.
2. Presentation.
3. Comparison.
4. Generalization.
5. Application.

Preparation fits the mind for the reception of the new truth. Presentation presents it and gives the mind particular notions. Comparison elaborates them into higher forms. Generalization reduces these forms to the convenient condensations in which the mind holds its possessions for future use ; application applies them.

These steps are well-defined phases of the teaching process. They are its logical and psychological subdivisions. As such they belong to, and are included in,

the teaching part of the recitation, and any discussion of these formal steps is a continuation of the discussion of that part of the recitation.

It is not our intention to discuss these steps according to the Herbartian school of pedagogy, which first formulated them, nor to make an exhaustive psychological study of their content and limitations. We shall not enter the realm of abstract speculation, but rather treat them from the practical standpoint, and give such a discussion and such hints and suggestions as may prove helpful to the teacher.

In this discussion it will be necessary for us to remember that the progress of instruction is from the particular to the general. Percepts, or particular notions, are the simplest forms of truth. They constitute the crude, disorganized, raw materials of knowledge. General notions are its finished products. Construction always proceeds from raw materials to finished products. The highly-organized and highly-finished mainspring of a watch was once crude ore. Numerous changes in form and structure were necessary to make it into a spring, but every change was a step in the progress of construction from raw material to finished product. What is true of construction in material things is true also of instruction when applied to the mind. The aim is to make vague notions clear; confused notions, logical; narrow views, broad; superficial insight, profound; and to lead the child from the consideration of particular ideas up to a comprehension of the great laws and principles around which a subject is organized. The progress is from the concrete to the abstract, from the simple to the complex, from the particular notion to the general concept which

From Raw
Material to
Finished
Product.

embodies the highest forms of organized knowledge. With this thought clearly in mind, let us proceed to a discussion of the formal steps.

The first formal step is preparation. This refers, not to the preparation that teacher and pupils have made prior to the recitation, but to that immediate preparation of mind that is necessary in order that the pupil may receive readily and assimilate fully the subject matter of the lesson. Its whole purpose is to prepare the mind of the learner to receive properly the new material, to put it into an apperceiving mood, so that the work of discovery, interpretation, and assimilation of the new material may be carried forward readily, rapidly, and successfully; thus saving both time and energy, and helping to secure greater efficiency in the mastery of the lesson.

With reference to this step two suggestions seem wise and necessary :

1. *The preparation must be timely.*
2. *The preparation must be appropriate.*

1. **The preparation must be timely.** In the assignment of the lesson the teacher should give such instruction and help as will prepare the mind of the child for the ready reception of the new material in his preparation of the lesson. The mind is thus prepared and stands ready to grasp, interpret, and assimilate the new material in the effort to prepare the lesson. This self-directed effort of the mind in the act of study, impelled by an intense desire to know and to understand, greatly extends this preparation made in the assignment of the lesson, and adds to its completeness.

But the preparation that comes from the assignment, and the further preparation that comes from the act of

study, are not sufficient in themselves. There must be that immediate preparation that is necessary to bring the mind to that condition of apperceptive receptivity so essential to the act of learning. The gardener not only digs the bed thoroughly, he also stirs it afresh for the reception of the seed. So the preparation of the mind for its seed must be *immediate* and *timely*.

2. The preparation must be appropriate. It is often said that each recitation should begin with a review of the preceding lesson. This is especially true with reference to that part of it that is necessary to the proper reception and interpretation of the new material.

Every recitation as suggested is a link in the chain of instruction. There is not only a point of contact, but a vital union between links. Yesterday's link must receive and unite with that of to-day, and to-day's link must be left in suitable condition to receive that of to-morrow. The review of the whole chain at stated times is wise, but a review of that part of the previous lesson to which to-day's work is to be joined is absolutely necessary.

The child acquires the unknown with and through the known. The latter grasps and identifies the former.

They are the related parts of the same subject. The child has one, but not the other, and *he must use what he has to get what he wants*. The new must be received and interpreted by the old. The child must learn with what he has. There is no other way.

But the possession of similar known matter is not all that is necessary. It must be aroused and prepared to seize and interpret that which is new in the subject matter. You cannot introduce a new friend without at

Preparing the
Seed Bed.

The Known
Grasps and
Identifies the
Unknown.

the same time presenting the old one. So in the introduction of the new truth the stock of related ideas already in the mind must be brought forward into consciousness in order to receive, to know, and to assimilate the new possession. Appropriate preparation thus calls up the closely related truth formerly learned, and brings it forward in the mind to grasp, interpret, and assimilate the new matter. The similar old facts are aroused from their slumber and rush forward into consciousness, eager and ready to receive the new fact, which, ever afterward, is to be associated with them in the most intimate family relationship. The gardener prepares the seed bed, not only at the right time, but he gives it the kind of preparation which the character of the seed it is to receive demands. The bed that is desirable for one kind of seed is not always suitable for another. So the preparation of the child's mind by the teacher must be not only *timely* but also *appropriate*. The review must not only call up some past experiences, but the very experiences necessary for a mastery of the new matter.

Introducing
the New to
the Old.

An illustration may help to bring out this thought more clearly. Last year, while visiting a school, the writer heard a young teacher attempt to present to a class for the first time the subject of *similar surfaces* in advanced arithmetic. No hints had been given in the assignment of the lesson, and at the beginning of the recitation nothing was done that would lead up to the subject under consideration, and thus prepare the pupil to grasp and understand it. Indeed, the first thing that was done was to ask the pupils to solve some of the difficult problems. It is needless to say that they failed. But their failure was no worse than that of the teacher. The

problem he failed to solve was the problem of timely and appropriate preparation of the class for the consideration of the subject. His failure made theirs possible and complete. There are two lines of approach to this subject that would have helped, at least, to prepare the class to understand it. The first is proportion, the second is square root. The class had studied both of these subjects. Their minds possessed groups of ideas closely related to the new subject through their knowledge of proportion and square root ; but these ideas had not been aroused and prepared to seize and understand what seemed new, but what was really old truth under a new name.

After the study of proportion and square root they become the two known factors in similar surfaces. Through these the child must acquire a knowledge of the unknown. They are, therefore, the lines of approach to this subject, the glasses through which it is to be seen. But the teacher had not adjusted the glasses, and the class could not see. Both failed ; the teacher, because he did not see the lines of approach to the subject, and the class, because the preparation of mind to understand the new subject was neither timely nor appropriate.

When a boy wishes to make a long jump, he goes back a few yards and then rushes forward at the top of his speed, in order to gather momentum for the leap. His preparation for it is thus both timely and appropriate. But the preparation for the leap is not more necessary than that required for the mind that is to make a vigorous and effective effort in comprehending and assimilating the subject matter of the lesson. The gun boat clears for action. It removes what

is unnecessary, and brings forward what is required for the engagement. So the mind prepares for work by calling up what is needed, and re-moving to the realm of unconsciousness, truth valuable in its place, but not necessary to the work at hand.

Clearing the
Mind for
Action.

TOPICAL OUTLINE

I.—FORMAL STEPS.

1. Preparation.
2. Presentation.
3. Comparison.
4. Generalization.
5. Application.

II.—PREPARATION.

1. It must be timely.
2. It must be appropriate.

PART II

CHAPTER III

PRESENTATION, THE SECOND FORMAL STEP

Lay down a plan for everything, and stick to it inviolably.

CHESTERFIELD

There is no substitute for thorough-going, ardent, and sincere earnestness.

DICKENS

If a man play the true logician, and have judgment as well as invention, he may do great matters.

BACON

Perspicuity ought never to be sacrificed in language or argument.

KAMES

CHAPTER III

PRESENTATION, THE SECOND FORMAL STEP

Lay your plans with wisdom.—BENJEL.

PRESENTATION is just as necessary as preparation. The prepared mind cannot acquire without proper presentation any more than a prepared field can produce a crop without the sowing of the seed. There can be no life, and no crop, without a vital union between the seed and the soil. The dormant life in the seed must be brought into right relations with the elements in the soil that will arouse and feed it. The result of this union is growth. So there can be no mental development until the subject matter of a lesson is brought into that peculiar relation to the mind that will result in its stimulation and growth. And presentation is the process by which this vitalizing union is brought about.

Sowing the
Seed.

The proper presentation of the subject matter in the teaching process is of paramount importance. For knowledge without presentation is impossible. Even the representative faculties must have some basis of presentation, however small, before they can proceed to re-present.

The subject matter of a lesson may be presented in various ways. The teacher may use the question method, the lecture method, or, in fact, any method. The process may be analytic or synthetic, inductive or deductive. The work may vary, but the purpose remains the same. *That purpose is to bring the subject*

matter of the lesson to the mind in such a way that it will strive to seize and know the thing presented.

In ordinary school work ideas are presented to the mind through the ear and the eye. This is the external part, but it is not all of the work of presentation. A sick man may look at medicine in a bottle, but it will not cure him until it is received and absorbed by his system. So the presentation of the subject matter before the mind is not sufficient in itself. There must be an *inner activity* working upon the presentation. The related ideas within must be aroused to action ; they must come forward into consciousness and actually seize and know the new matter. And thus to arouse and direct this inner activity is the great aim of presentation.

Mental Action
the Goal of
Presentation.

This is the point of failure for many. It is so easy to talk about the lesson, and so difficult to arouse and direct this inner activity, to actually put the mind to work upon the subject matter, that many well-meaning teachers substitute the former for the latter, and then wonder why the pupils make such slow progress. In the class-room you may often hear the teacher talk about the lesson, perhaps in a learned manner, deluding himself with the notion that he is teaching, while the pupils, by their indifference, their listlessness, and their lack of interest, indicate that there is no inner activity responding to his efforts. Such work is worthless. You might just as well try to explore a cave without entering it or to fill a bottle without removing the cork. Teaching is a twofold process. It requires the interested co-operation of two persons,—a teacher and a learner. There must be an external effort and an internal activity responding to it. And the

Talking versus
Teaching.

evidence that the mind is aroused to action by the presentation is seen in the interest and attention of the pupil. They indicate that the known within is striving to know the unknown that the teacher is presenting.

The act of teaching, then, is two fold. It includes,

1. *An external presentation.*
2. *An internal activity.*

Both are essential, and the latter, as a rule, is the result of the former. But while the mind generally responds to skilful presentation, it is under no obligation to do so. The inner activity dominates. As Rosenkranz says, "It lets nothing act upon it unless it has rendered itself receptive to it." But while this is true the external presentation, under ordinary conditions, will so stimulate the mind as to arouse that inner activity. The key to the situation at this point is interest. If the presentation is full of interest it opens the throttle-valves of mental action and unlocks the wheels of thought. If it is devoid of interest, the child is likely to turn its mind aside to the consideration of something irrelevant. The child's mind flits from one thing to another, as the bee flits from flower to flower. The bee seeks honey, the mind seeks that which will interest it.

1. **Presentation as an external process.** The proper presentation of the subject matter of a lesson is not an easy task. It must vary somewhat with time and circumstances, and yet a few general principles may be stated that will to some extent guide the teacher and throw some practical light upon this phase of the work. A good presentation must have at least six characteristics: It must be *clear, strong, logical, to the point, in accordance with some prearranged plan, and complete, not fragmentary.*

1. *Presentation must be clear.* Fog is fatal to photography. The camera that would record faithfully, print sharply, and reproduce accurately, must see clearly. So the mind that would receive readily, retain permanently, and express correctly, must see clearly. Good teaching always brings the thing to be seen and known out of the fog, and holds it up sharply and distinctly before the class. It thus tends to give accuracy, distinctness, and permanence to the impression.

Hazy Presentation leaves Indistinct Recollections. While a hazy presentation gives a hazy perception, and a hazy perception makes a dim impression, and a dim impression leaves an indistinct recollection, and that soon vanishes, and upon examination day the child has nothing, not because the subject was not presented, but because the presentation was not clear.

But the practical teacher may ask, What will enable me to make the presentation of the subject matter of a lesson clear? Though the problem itself is difficult, the answer is simple. No artist ever spread upon canvas or carved into marble the image or the form of the thing he did not see clearly, either in the realms of the real or of the ideal. But the vision of the thing to be portrayed is not enough. Many a dreamer sees angels imprisoned in stone, but he can neither release nor reveal them. The artist, in order to embody his visions, must have the necessary means, the appropriate tools, and the ability to use them with skill and precision. The teacher's tools are thought and language. Hence, the clear presentation of a lesson depends upon three conditions:

Seeing the Thing to be Taught.

(a) *The teacher must have a clear perception of the thing to be presented.*

(b) *The teacher's thought must be direct, distinct, adequate, and logical.*

(c) *The language of the presentation must be simple, direct, intelligible to the child, and free from all confusion of terms.*

If these conclusions are correct they reveal the importance of carefully reviewing and carefully planning a lesson before attempting to present it.

2. *Presentation must be strong.* By strength we mean that quality of a presentation which tends to make its effect permanent. There may be many elements in strength, but three of them are of such importance as to demand our attention. They are clearness, earnestness, and repetition.

(a) The first element in strength is *clearness*. In welding two pieces of iron, the smith heats them to the proper degree, lays one upon the other, and both upon the anvil, and then delivers *a few strong blows* upon them with a hammer. This results in a permanent union. A few strong blows do what a hundred light taps would not accomplish. So, when the mind of the child is raised to the white heat of attention by the fires of interest, a clear presentation of the truth is likely to make a permanent impression. This, however, is clearness, not strength. But if clearness is not strength, it is at least the first element of it.

(b) The second element in strength is *earnestness*. This quality does not necessarily make the teacher loud and boisterous in manner. It may only be a quiet, eager, urgent effort to get the class to see and understand. But it is generally effective, for sincere, hearty earnestness is always vigorous and forceful. Alley asserts that "Earnestness and simplicity

Earnestness is
Irresistible.

carry all before them.” Heart power in the teacher is as important as head power. Sincerity and conviction are as essential as skill. The character, the individuality, and spirit of the teacher speak through his earnestness and zeal. Springing from the furnace fires of interest, earnest effort helps to raise the learner’s mind to its highest degree of receptivity and to project the presentation toward it with greatest force. The result is a lesson well comprehended, deeply impressed, firmly fixed. The force of a moving body depends upon its size and rate of motion. And the whole-souled eagerness, the intense interest, the sincere effort, and the serious earnestness that stand back of a presentation give it both size and rate, and, therefore, help to determine the force with which it impresses itself upon the learner’s mind.

(c) The third element in strength is *repetition*. Clearness and earnestness are not always sufficient. Another element is sometimes necessary. A drop of Pounding the Rock to Sand. water falling upon a rock makes seemingly no impression, but if continued and repeated it grinds it to sand. Repetition, then, is an important element of strength. Hence the law: *Clear presentations, earnestly repeated, become strong ones*. Clearness aids the child in seeing the thing presented; earnestness and repetition help to fix it firmly in the mind.

The number of repetitions needed to make clear presentations strong depends, first, upon the attention of the learner; second, upon the quality of his mind; and, third, upon the nature of the subject matter.

1. The attention of the learner is important. The mind cannot be forced to receive; it must reach out to grasp what it wants. And the degree of attention indi-

cates the eagerness with which it strives to grasp and know the thing presented. It follows, then, that a few repetitions when the mind is most alert and impressionable are better than many when it is only indifferently attentive. A few blows when the iron is hot accomplish more than a score when it is cold.

2. The quality of the mind helps to determine the number of repetitions needed to comprehend and fix a lesson. Some minds are dull. They lack keen insight, deep penetration, and quick perception. They act slowly in receiving, comprehending, recording, and recalling what has been taught. They need more time to grasp a presentation and more repetitions of it to make it permanent than are required by brighter minds. Hence, the number of presentations needed will depend somewhat upon the quality of the learner's mind.

3. The nature of the subject matter, too, will help to decide just how often a presentation must be repeated. Difficult subjects must be taught oftener than easy ones. Failure on examination may be due to the fact that while the presentation of the lesson was clear it was not repeated often enough to have the pupils grasp and retain it. For instance, one presentation of the analytic reason for inverting the divisor in division of fractions will scarcely be enough. It will generally be found necessary to repeat this process two or more times even with a bright class, and oftener with a dull one.

Difficult
Subjects must
be presented
often to the
Dull Mind.

Clearness, earnestness, and repetition are the elements of strength. The first alone will not always accomplish the purpose. Neither will the first and second acting together. But no normal mind can resist the united efforts of all. For earnest presentations that are clear,

if repeated often enough, must accomplish their purpose.

3. *Presentation must be logical.* This is not a claim for the logical as against the pedagogical, but rather a plea for a more logical presentation of that which is pedagogical. It follows the line of De Garmo's thought, that "the matter of instruction must not be presented in mass, but in small, logically connected sections." The mind must be made to associate the parts of a lesson, and to bring them into consciousness as a logical unity, rather than to leave it distracted by the effort to comprehend a confused mass of disconnected details. The logical relation of facts and parts of a lesson must not be disregarded in the presentation of its subject matter.

Then, too, logical presentation accelerates the progress of the learner. The mind is a logical organism. It tends to act along logical lines. It seeks logical relations. Teaching is simply pointing out these relations, and learning is seeing and comprehending them.

Swimming
with the
Current.

It is evident that you make more progress swimming with the current than against it. And it is just as evident that the child will make more progress if the teacher points out these relations in the logical order in which the mind is looking for them.

But what will enable the teacher to present the material of a lesson logically? The answer is simple. (a) The teacher must see the unity of the lesson he is to teach. (b) He must comprehend it also in its analytic parts and their relations.

This suggests the necessity of reviewing subjects and revising old plans and outlines before using them. To

every growing teacher the results of such a review is a clearer perception of the subject, a stronger grasp of its unity and analytic relations, and a plan of procedure more logical, pedagogical, and complete.

But it suggests another important point. Like produces like. Every instructor in a normal school and in all the higher institutions where teachers are trained ought to be clear and logical in thought. For teachers trained for any length of time by such instructors must acquire the habits of mind that will make them clear and logical in the presentation of the subject matter of a lesson when they in turn become instructors.

4. *Presentation must be to the point.* It must be definite, not indefinite; specific, not general. A good drill will penetrate steel, but, like good teaching, it must have both point and edge. Such teaching always goes to the vitalizing centre of the thing that the child is to see, to think, to know. It disentangles that thing from every thing else, and points it out definitely and distinctly. It clears away all irrelevant rubbish and helps the pupil to focus the concentrated energies of his intellect upon the one thing at issue. It brings the mind of the child not near the point under consideration, but to it. It turns the searchlight of his intellect not only into the region, but to the very spot where the thing to be known is to become luminous and distinct.

Hitting the
Nail on the
Head.

5. *Presentation must be loyal to a true aim and faithful to an orderly plan.* Blind, hap-hazard presentation is as devoid of results as it is of skill. Aim must give it unity; and plan, order. The general without an aim and a plan for battle invites defeat. And the presentation without aim and plan invites failure.

But these are of little value unless the presentation, at every stage of the work, is true to the aim and loyal to the plan. Aim is the compass, plan is the chart. Follow them, and you accomplish at least a measure of success; desert them, and you drift idly with the current, inviting its tides to carry you away from rather than to the desired haven.

Drifting with
the Tide.

Two statements will sum up this matter :

(d) *Every good presentation has a true aim.*

(b) *Every good presentation follows an orderly plan.*

The exigencies of the case and the content of the subject matter determine the aim; logical and pedagogical judgment arranges the plan; and fidelity to aim and loyalty to plan acting through skilful presentation carry the work forward to the desired end.

A geography lesson, for example, may be a unit. The teacher analyzes it into its fundamental and subordinate parts. These parts are to be considered in certain sequence and the emphasis placed here and there upon important points. The plan fixes the logical order in which they are to be considered. It unfolds the subject naturally and leads the child along the lines of easy acquisition to the philosophic standpoint where he can see both ways clearly, back to the acting cause, and then forward to the resulting effect.

The plan may be written or unwritten, definite or indefinite, logical or illogical, but every teacher, in justice to himself and to the child, should have, not only a plan, but the best plan he can make; because his own intellectual growth and that of the child are measured in any recitation by the execution of a logical plan.

6. *Presentation must be complete.* Every lesson has its unity. It may be a subdivision of a subject, a para-

graph, or a group of related paragraphs. But whatever it may include it has a unity more or less well defined. As such, the lesson has essential features and those that tend to elaborate them. If there is sufficient time both the major and the minor thought of the subject matter may be brought out. But if the time is limited, the fundamental facts essential to the unity of the lesson should be presented even if some subordinate matter must be omitted.

Major Thought
must be
Taught.

This is evident, first, because the fundamental truths that constitute the unity of a lesson are of more worth than unimportant details; and, second, because they generally lie deeply hidden and are, therefore, more likely to evade the superficial efforts made in the preparation of a lesson.

Instruction moves forward by stages, steps, or lesson unities. And each, as far as possible, should be full and complete, not partial and fragmentary. It should include all its essential features and as much of their elaboration as the case demands and as time permits.

The habits of drifting in a recitation, of wasting time on unimportant details or irrelevant discussions, and of leaving the essential features of the lesson unity incomplete are as detrimental to the intellectual progress of the child as they are to the pedagogic growth of the teacher. The unity of a recitation is embodied in its beginning, its purpose, its plan, its essential features, and its end. And the wise teacher, with the idea of completeness in mind, *starts at the beginning, proceeds according to the plan, presents its essential parts, attains the end, and stops when he is through.*

Unimportant
Details require
Little Time.

External presentation, then, is marked by these qualities: It is clear, strong, logical, and to the point; it is

loyal to a true aim and faithful to an orderly plan; and the teacher who with earnestness and vigor thus presents the subject matter of a lesson in its unity will, in all probability, arouse the mind to appropriate action and meet with a large measure of success.

2. **The inner activity.** The external phase of presentation is important, but not more so than its inner activity. A block of wood will not serve as a camera, because there can be no inner response to external presentation. So the inner activity of the mind is just as essential in the act of learning as the external presentation. This activity is generally the result of the presentation. They stand in relation of cause and effect. If the presentation is earnest and skilful, embodying the qualities just described, it will in all probability stimulate the mind to vigorous action.

Three characteristics of this inner phase of presentation are worthy of notice. Mental action must be *aroused, sustained, and directed*.

1. *Mental action must be aroused.* Strength is the result of action. The muscle that remains inactive becomes weak and flabby, and actually loses to the point of paralysis the strength it has. So faculties that are dormant not only gain no strength, but in time actually grow weaker. The first effort of instruction is to arouse mental action. If it fails at this point, its failure is complete. Every external presentation, then, is worthless unless it stimulates mental action. For motion means life, growth, and strength, while stagnation is the forerunner of decay, and decay of death.

2. *Mental action must be sustained.* The hare that made

A Block of
Wood is not
a Camera.

Mental Action
the First
Effort of
Instruction.

a spurt of speed and then lay down to rest lost the race. The tortoise that sustained a steady gait was in the end successful. The strong horse that pulls and balks at pleasure is unreliable. An inferior animal, whose efforts are sustained and regular, is far more desirable. So the mind should not be alert and dormant at intervals during the recitation. Its activity, rather, should be sustained and regular.

The aim of education is to develop a mind that can act steadily and regularly along any given line to which its energies may be directed. It thus becomes a ready, steady, reliable servant of the will. And such a mind is not the result of action that manifests itself in spurts and starts at sundry times and irregular intervals, but of that quality of action that is sustained and regular.

But what will enable the teacher to sustain mental action during a recitation? And what indicates the success of his efforts?

(a) *Continuous interest sustains mental action.*

(b) *Continuous attention is the evidence of it.*

The one is the cause, the other the effect. The physician knows the flow of the blood by the throb of the pulse. Attention is the pulse of mental action. And continuous attention is the external evidence of sustained mental action.

3. *Mental action must be directed.* For a thousand years the waters of Niagara rushed over the falls in awe-inspiring sublimity. They were uncontrolled, and laughed at the efforts of man to use them. To-day they are led out into channels, through turbine wheels and thus are directed, harnessed, controlled, and whirl the wheels of industry with tireless activity. Fire and water, uncontrolled, are dangerous as elements and use-

less as motors ; but harnessed, hitched, directed, controlled, and managed, they are man's best friends, bringing the dollars of the world to the doors of his home and lifting him above the level of human drudgery. So it is not enough to *arouse* and *sustain* mental action. It must be *directed* to a specific purpose, and *controlled* by a specific aim. It must be aroused, directed, and controlled in the line indicated by the aim and purpose of the recitation. And it must continue to act in this direction until the end is attained and the conclusion reached. And *the unity of aim in the teacher's mind, acting through the instrumentalities of the presentation, is the compass that guides and the hand that directs.*

The Compass
that guides.

Presentation is not all of the recitation. But it is a most important part of the teacher's work. It is through presentation that tact, insight, skill, personality, and power make themselves felt. It is by it that the teacher teaches, and through it that the pupil learns. For it the school was organized, and from it the child draws much that the school gives. In its external phase, presentation must be clear, strong, logical, to the point, loyal to a true aim, faithful to an orderly plan, and complete. And such presentation is likely to arouse, sustain, and direct the mental action of the child and thus accomplish its purpose.

TOPICAL OUTLINE

PRESENTATION

I.—ITS EXTERNAL CHARACTERISTICS.

1. It must be clear. This depends upon three conditions :
 - (a) The thing to be presented must be clearly perceived.

- (b) The teacher's thought must be direct, distinct, adequate, and logical.
- (c) The language of the presentation must be free from confusion of terms.
- 2. It must be strong. The elements of strength are :
 - (a) Clearness.
 - (b) Earnestness.
 - (c) Repetition. The number of repetitions depends upon :
 - 1. The degree of attention of the pupil.
 - 2. The quality of his mind.
 - 3. The nature of the subject matter.
- 3. It must be logical. This depends upon a logical perception of
 - (a) The unity of the presentation.
 - (c) Its analytic parts and their relation.
- 4. It must be to the point.
- 5. It must be loyal to :
 - (a) A true aim.
 - (c) An orderly plan.
- 6. It must be complete.

II.--ITS INNER ACTIVITY.

- 1. Mental action must be aroused.
- 2. Mental action must be sustained.
 - 1. Continuous interest sustains mental action.
 - 2. Continuous attention is the evidence of it.
- 3. Mental action must be directed and controlled :
 - (a) By unity of aim.
 - (b) By the instrumentalities of the presentation.

PART II

CHAPTER IV

COMPARISON, THE THIRD FORMAL STEP

It may startle you to learn that the higher function of the mind is nothing higher than comparison.

SIR WILLIAM HAMILTON

Every act of thinking, whether it be to analyze our concepts, or to combine the elements that result from analysis, into new forms, includes inevitably a comparison.

WELCH

A cardinal defect in most men's thinking is that they have no well-established standards of comparison.

MORGAN

CHAPTER IV

COMPARISON, THE THIRD FORMAL STEP

It may startle you to learn that the highest function of the mind is nothing higher than comparison.—SIR WILLIAM HAMILTON.

THE *third* formal step in the recitation is comparison. It might at first thought be called association, as this process is included in it as an important part. But while this is true, association is subordinate to, rather than co-ordinate with, comparison. And yet in this discussion it may be wise to separate them and treat them somewhat as co-ordinate elements.

1. **Comparison.** Comparison so dominates this step as to name it. The purpose of presentation is to stimulate and direct mental action. And the activity of first importance at this stage of the work is comparison. It is a prominent factor both in the act of learning and that of teaching. It, therefore, has a *psychological* as well as a *practical side* and may be considered from each standpoint.

1. *The psychological aspect of comparison.* In presentation the inner activities examine the new material of knowledge and lay hold of it in the act of apprehension.

But the mind is not satisfied with mere apprehension. It demands more complete and intimate knowledge of the things apprehended. It, therefore, proceeds to examine them intimately, one by one, through the processes of analysis, comparison, abstraction, and generalization, in an effort to comprehend them. This is pre-eminently

the stage of comprehension in the act of learning. But the comprehension of any subject or thing is the result of the thinking faculties. You know a fact when you have comprehended it in its unity, its analytic parts and their relations, in its history and its application. And such knowledge is the result of vigorous and systematic thought.

(a) There are three well-defined stages in the thinking process. The first is *conception*, the second *judgment*, and the third *reasoning*. The first begins with percepts, and by analysis, comparison, abstraction, and generalization works them into concepts. This is thinking in the first stage, in its most elementary form.

(b) The second stage begins with concepts, and by examination, comparison, discovery, and decision reaches a conclusion and states it in the form of a judgment. This, too, is thinking, but in a more advanced stage than the first.

(c) The third begins by examining and comparing two or more judgments, and by inference, or deduction, forms a third one, based upon or growing out of their relations. This is what is usually termed reasoning, or thought in its highest form. The fundamental factors, then, in the thinking process are conception, judgment, and reasoning. And these include analysis, comparison, association, abstraction, and generalization.

It is to be noted that *comparison* holds a most important place in the art of thinking. It is present in an elementary form even in conception. And in judgment and reasoning, the highest forms of thought, it is the dominant factor, the very pivot upon which thought turns. For judgment is

Stages in the
Thinking
Process.

Reasoning a
Comparison
of Judgments.

practically a comparison of concepts and reasoning is a comparison of judgments. Sir William Hamilton asserts that "The highest function of the mind is nothing higher than comparison." And since the learning process at this stage is pre-eminently a thinking process, it practically dominates the work in this formal step.

Much of the practical value of the teacher lies in his ability to suggest comparisons and to direct the mind in making them. He fixes firmly the standards of measurement, points out similarities or differences, shows the child how to estimate them, and guides his mind until a correct conclusion is reached. He keeps the mind busy reaching conclusions and stating them. This is the process ordinarily called judgment, and every judgment is simply the conclusion of an act of comparison stated.

A few questions may help to illustrate this from the practical standpoint. How does the size of Ohio compare with that of Pennsylvania? How does Asia compare with Europe in surface, in form, and in extent? How do they differ in religion, in education, in government, and in civilization? In what particulars does the coast line of South America resemble that of Africa? How does it differ from that of Europe? What similarities and what differences are found in the climates of Labrador and England?

Either the judgment or the memory must supply answers to these questions. If the answers come from the memory the work is very shallow and superficial, but if they spring from the judgment nothing short of the process of comparison can supply them.

In each act of comparison suggested by these questions, the child tries to comprehend the unknown by measuring, weighing, or judging it by the similar known thing. It

holds the two concepts before the mind, looks from one to the other, compares them in the way suggested by the question, discovers their resemblance or difference, measures its extent and reaches a conclusion about them, and states it. To do this is *to think, to learn, to comprehend,*

Measure the
Unknown by
the Known.

to see the unknown through the known. Judg-

ment is the statement announcing that the unknown has been transformed into the known; but comparison is the process by which the mind discovers the former in the latter. In presentation the whole effort is to arouse, sustain, and direct mental action; and the mental action thus directed will, in all probability, be rewarded by discovering what it seeks.

2. The discussion of the practical side of the question may be included in two suggestions:

(a) *Furnish the mind with accurate and fixed standards of comparison.*

(b) *Train the mind to use them.*

Teaching, to a very great extent, consists in giving to the student fixed standards and in training him in their use.

(a) *Fixed standards of comparison.* It is difficult to measure if you have no fixed unit by which to estimate the unknown. And it is just as difficult for a child to estimate a new thing by comparison without some known standard of measurement. All science rests upon fixed standards of size and extent, form and motion. Science is classified knowledge. And classification is as impossible without comparison as comparison is without the use of known standards. All intellectual attainment is estimated by fixed standards of knowledge, and all moral excellence by fixed principles of right and wrong.

How long is this line? The child who knows the num-

ber of feet in a yard and has a well-fixed notion of the length of a foot may answer with some degree of certainty. The accuracy of his judgment depends upon the accuracy of his fixed standards used as the basis of comparison. What is the color of this flower? The child cannot answer until he has referred it to his fixed notion of primary colors. The perception of the color of the flower as he attempts to answer will be decided by his color concepts,—that is, his fixed standards of colors. Is this composition a piece of good English? Before answering the critic compares it with the fixed known standards, established by style, syntax, and rhetoric. If these standards are sharp, clear, distinct, and accurate, his opinion will have some weight. For the value of his opinion depends upon the accuracy of his standards. Is alcohol a food? The student who has not fixed notions of what constitutes a food, and of the effects of alcohol, may give an opinion, but it is worthless. Is this act right? Before answering the pupil must measure it by the fixed principles that separate right from wrong, or his opinion will not be worth the words that express it. Thus all sound judgment and substantial opinion are the results of acts of comparison in which the known fixed standard tries to measure and estimate the unknown.

The Value
of Fixed
Standards in
estimating
the Unknown.

How important, then, that the school give to the child fixed standards of comparison! In arithmetic he can make little progress without the multiplication table and the tables of weights and measurements. A knowledge of factoring is essential to progress in algebra. A knowledge of the fixed terms, rules, definitions, and principles of any science lies at the very basis of its mastery by the student.

The Endless
Chains of
Cause and
Effect.

Truth is the endless chain of cause and effect. Every cause has its effect, and every effect in turn becomes a cause. Cause, then, may be a standard of comparison by which to estimate effect, just as effect may be the standard to estimate the cause. But whether we go from cause to effect or from effect to cause, the standard—that is, the thing known—measures our progress and establishes the accuracy of our conclusions.

Accuracy of conclusion, clearness of thought, and soundness of judgment rest primarily upon comparison, and comparison turns upon the importance of fixed and accurate standards of knowledge. In the physical world science has established fixed standards of size, weight, form, color, taste, and odor, and of all the qualities of matter. In the intellectual world these standards are the tables, principles, terms, rules, definitions, and laws of science. In the moral world they are the principles of ethics and the rules of conduct. Science fixes these standards for the race, but the school must give their mastery to the child. A knowledge of them is the goal of instruction. The test of thinking is accuracy, and accuracy of conclusion is measured by the permanent standards of comparison; hence to give them is the first aim of the school.

Sound
Judgment
and Fixed
Standards of
Comparison.

(b) *Train the child in the use of these fixed standards.* The two desirable qualities of comparison are accuracy and facility. The former depends upon a knowledge of the fixed standards, the latter upon their use. Skill grows with practice. The child must use the multiplication table. He must use the tables in denominate numbers, even to the handling of actual weights and measures. The sand box, the scales and the quart

measure help to give both knowledge and facility. The child must be trained to use the rules of syntax, the principles of logic, the laws of science, the generalization of truth, and the standards of moral conduct. Truth must be kept in action, in motion, in use, or knowledge of it will rust.

Know and use. These are two of the shortest, yet perhaps two of the greatest, admonitions of pedagogy. Know the fixed standards and use them and thought will be clear, judgment accurate, conclusions correct, and opinions respected. The cardinal defects in school work are due either to an ignorance of these standards or to the inability to use them. A pair of scales is serviceable only when one has the weights and knows how to use them. Comparison is the scales of the mind. The Scales the Mind. And if the child would weigh the subject matter of a lesson with some degree of accuracy, he must have fixed standards of comparison and know how to use them.

2. *Association.* Association is the second element in the third formal step. It is a secondary factor, and yet it is important in its place. Comparison helps us to sort out and classify our experiences according to their similarities, or their differences, and to estimate the extent of either. Memory preserves these experiences, recollection recalls them, recognition identifies them; while association binds them into groups, or unites them into trains, so that when one idea is recalled it suggests the next, and then the next, until the whole group or train is brought into consciousness. Association, then, is the process by which one idea present in the mind suggests another.

This subject, like comparison, has two aspects,—the

psychological and the practical. The one shows the operation of the psychical laws by which the suggestions are made, the other shows how to consider ideas in the work of instruction in order to aid these laws.

1. *The psychological aspect of association.* Ideas present in the mind suggest related ones and those with which they were formerly associated. This is the general law. The important thing is to ascertain just how the mind acts in associating its experiences so that one will suggest another. Mental science has thrown much light on this subject and lifted it above the level of theoretical speculation. It shows that the mind acts in accordance with well-established laws in making its associations, so that one present in consciousness will suggest another. The most prominent of these laws may be designated as follows :

- (a) The law of similarity.
- (b) The law of contrast.
- (c) The law of contiguity.
- (d) The law of correlation.

(a) *The law of similarity.* Similar ideas suggest each other. This is a prominent law of association. If a friend relates some incident, you immediately think of one like it. Two story-tellers will occupy hours telling stories, each alternating with the other. One calls up another seemingly without effort. In speaking of great orators, if Webster is mentioned, Calhoun and Clay will immediately be suggested. In considering the death of McKinley, you are sure to think of that of Garfield and Lincoln. Think of the inventive genius of Edison in the field of electricity and it will suggest that of Marconi. If you read of Herbert Spencer's intellect as one of the most capacious of all time, you at once think of Bacon,

Kant, or Aristotle. Thus an idea present in the mind suggests others like it.

(b) *The law of contrast.* Contrasted ideas suggest one another. This law is just as positive as the law of similarity. In discussing temperature, the idea of extreme heat will suggest extreme cold. In the same manner war suggests peace; light, darkness; vice, virtue; and truth, error. In speaking of the rapidity and convenience of the modern express train, your mind will immediately call up the old stage coach with its lumbering gait and its lack of comforts. The wealth of the rich is far removed from the poverty of the poor, yet one drags the other into consciousness by the operation of this law. For contrasted ideas are so tied together that the consideration of the one without thinking of the other is difficult, or almost impossible.

(c) *The law of contiguity.* Ideas once closely associated in time or place suggest each other. Last year, as you drove through the country, at a certain place a rabbit ran across the road. The fact seemingly is forgotten; but this season, as you approach the same spot, the incident and everything associated with it rushes into your mind. You are introduced to a gentleman at some time or place and under some peculiar circumstances. The place or time will suggest the circumstances, and the next time you meet the gentleman you will recall the former occasion and all things connected with it. This law is important and far-reaching. It gives to the mind a marvellous power to call forth its related ideas.

(d) *The law of correlation of ideas.* Ideas closely and mutually related suggest each other. Correlative terms are mutually suggestive. In language the word

stands for the idea; you see one but think the other. Symbols suggest their signs. The term wife suggests husband; mother, daughter; cause, effect; the beginning, the end; the first, the last; and the subject, the predicate. Ratio seems tied to proportion, antecedent to consequent, involution to evolution. This is the great law of association. All knowledge is related; and this law unites facts into trains by relation, so that one fact in consciousness calls forth the nearest related one, and that fact calls forth another.

2. *The practical aspect of association.* In recalling its experiences the mind acts in accordance with these laws. They may, however, be either aided or retarded in their operation by the character of the teacher's work. The skilful teacher, understanding them and their far-reaching influences, will so associate ideas in the work of instruction as to help, rather than hinder, the mind in its efforts to recall. Ideas, like birds of a feather, flock together, and the teacher should use these laws of association as far as possible to encourage this flocking tendency. Skilful presentation, which is only another name for skilful teaching, swims with the current, not against it. It utilizes, rather than antagonizes, the laws of the mind. It recognizes them, uses them, prepares work for them, co-operates with them, and acts by and through them. Indeed, good teaching may be defined as the art of presenting truth according to these laws.

Growing out of these laws of association, and answering to them, are four practical suggestions that may be given for the guidance of the teachers:

(a) *The association of similar ideas in the work of instruction aids the mind in keeping and recalling its ex-*

Flocking
Tendency of
Ideas.

periences. The new idea should be compared to and associated with the similar known one. This is at once the best way to know the new thing and to aid the mind in recalling it.

This principle may sometimes be extended with great profit beyond the boundary of similar ideas to the study of two or more similar topics. For a topic is only a unity of related ideas, and what applies to one in the group, through the law of their unity, applies to all. This principle is especially in place in reviews, when the aim is not so much to impart fresh truth as to deepen impression and aid the mind in storing its ideas for future use. In such cases chronological order, and even

Similarity of Topic. cause and effect, so important in the work of instruction, may occasionally give place to similarity of topic. For example, it may be wise in history to review all the acquisitions of territory, all the slavery struggles, all the monetary legislation, or all the tariff contests consecutively. Instead of studying consecutively chronological cross-sections of the current of history, as is ordinarily done, it is both wise and pedagogical to take a single idea and trace it from its origin in all its changes as it floats down the stream of time.

(b) *The association of contrasted ideas in the work of instruction aids the mind in recalling its experiences.* This rule is no less important than the preceding one, although it may be more limited in its application. The new material in the lesson must be associated, not only with similar known matter, but also with that which is in sharp contrast.

In considering the virtue of one man the law of similarity would suggest corresponding virtues in another.

But the law of contrast must not be disregarded. In associating the new with the old, vice must be contrasted with virtue, truth with falsehood, purity with corruption, generosity with selfishness, and strength with weakness. Bacon, whom Byron called "the greatest, wisest, meanest of mankind," was a wise judge, but he was foolish enough to accept bribes. Rousseau was so interested in children that he told the world how to educate them, and yet he was so little interested in his own as to leave them to the tender solicitude of an asylum for foundlings. Marcus Aurelius is one of the most lovable characters in all history, yet he persecuted the Christians. His "Meditations" embody much of the ethics of the Man of Galilee, yet he was only a pagan. Goldsmith's works are as full of wisdom as his acts are of folly. And Johnson, whose style is so stately and majestic, was himself uncouth and repulsive. Truth has its extremes, its contrasts, and its paradoxes. And the wise teacher, in the act of instruction, not only emphasizes similar ideas, but also those in contrast,—the old with the new, and the new with the old. For, in teaching, contrasts sharply drawn help to fix truth and to aid the mind in recalling it. And the teaching that calls up these contrasts works through two laws of association,—the law of contrast and the law of contiguity.

(c) *Ideas considered at the same time in the work of instruction aid the mind in recalling them.* This is in harmony with the law of contiguity and needs no discussion. It is wise, however, for the teacher to seize upon, and bring together in the work of instruction, the essential principles, the vital elements of a subject, the old and the new, rather than to aid the mind in recalling knowledge not worth knowing.

(d) *Pointing out to the pupil the intimate and mutual relations of truth aids his mind in keeping and recalling the experiences thus united.* In history, geography, physiology,—in fact, in every science,—cause and effect bind whole subjects together, and the discovery of their mutual relations helps the mind to recall myriads of facts thus unified.

The language of instruction must be transparent. The child must see, not words, but ideas and their relations. The thing symbolized must be seen through its sign. Cause and effect must stand out as complementary parts of a great unity, the one acting, the other resulting. *Relations mutual, reciprocal, causal, and logical are the cardinal virtues of all real instruction.* Cardinal Virtues of Instruction. It must point them out, hold them up, and hand them over to the grasping mind of the child. And the teacher who can do this not only teaches well, but also trains the mind to retain and recall these relations readily and accurately.

Comparison is the third formal step in the recitation, but it includes also association. Both are vital. The first is the foundation of the thinking process, the second is the key to representation. The one helps the mind to *know*, the other to *recall*. The one discovers relations, the other binds them together into groups convenient for recalling. The one demands standards of comparison and the ability to use them, the other trains the mind to recall these standards when needed. Association the Key to Representation.

The first formal step prepares the mind for the reception of truth. The second presents it. And the third aids the mind in *knowing*, in *keeping*, and in *recalling* it.

TOPICAL OUTLINE

I.—COMPARISON.

1. The psychological aspects of comparison.
 - (a) Comparison as the basis of conception.
 - (b) Comparison as the basis of judgment.
 - (c) Comparison as the basis of reasoning.
2. The practical aspects of comparison.
 - (a) Fixed standards of comparison.
 - (b) Ability to use them.

II.—ASSOCIATION.

1. The psychological aspects of association.
 - (a) The law of similarity.
 - (b) The law of contrast.
 - (c) The law of contiguity.
 - (d) The law of correlation.
2. The practical aspect of association.
 - (a) The association of similar ideas in the work of instruction aids the mind in recalling its experiences.
 - (b) The association of contrasted ideas has a like effect.
 - (c) Ideas considered at the same time in instruction aid the mind in recalling them.
 - (d) Seeing the intimate relation of ideas aids the mind in recalling them.

PART II

CHAPTER V

GENERALIZATION, THE FOURTH FORMAL STEP

Generalization is only the apprehension of the one in the many.

SIR WILLIAM HAMILTON

The poorest service you can render a pupil is to give him a ready-made definition.

AGASSIZ

Diligence ensures success.

R. G. PARKER

To assign the lesson in accordance with the ability of the class to acquire, requires judgment, knowledge, and a large share of common sense.

Selected

CHAPTER V

GENERALIZATION, THE FOURTH FORMAL STEP

Generalization is the goal of instruction.—McMURRY.

WE have considered three formal steps in the recitation, and are now prepared to study the fourth, which is ordinarily designated as generalization. In the first stages of the learning process the mind examines individual facts, acquires an intimate knowledge of them, and then relates it with similar old knowledge according to the laws of association. In this formal step it advances to a higher plane and acquires general notions from an examination of individual cases. It passes over from the consideration of things concrete to the consideration of abstract qualities common to a class. It no longer contemplates things individual, because it has focused its energies on things general. In short, it has reached general truths through the examination of particular cases by the process called generalization.

An illustration will make this clear. One may examine the individual records of a number of business men, note that each is scrupulously honest, and that each seems to prosper in business. This knowledge is the result of the individual investigation made in the third formal step. The mind is now ready to generalize. It rejects every other fact in the records of the men except their honesty and prosperity, and proceeds to abstract these two qualities and to generalize by stating that "honesty is the best policy."

Generalization is of great importance. The preceding

steps exist for it. To reach general truths and to apply them is the true aim of all instruction. And teaching that falls short of this end is incomplete and unsatisfactory. Generalization makes truth universal in its application. It compresses knowledge into those convenient condensations in which the mind stores it and holds it for future use. It is the culmination of the thinking process and gives its highest finished product. Generalizations form the frame-work of science. Indeed, science may be defined as a system of related generalizations. The mind examines, acquires, and interprets with what it has. And since its possessions are largely in the form of generalizations they constitute the capital stock with which it works. They are the known standards that come forward into consciousness to examine, measure, weigh, and interpret the unknown, and thus transform it into the known, and to give it suitable classification among the mind's permanent possessions. Thus generalization renders a valuable service in aiding the mind to acquire, interpret, and organize new knowledge, and to condense it into consistent forms for practical use.

In the discussion of this step, attention is called to two important considerations:

1. *Generalization gives rules, definitions, principles, laws, and maxims.*

2. *Generalization comes after presentation and comparison.*

1. Generalization gives rules, definitions, principles, laws, and maxims. "Processes precede rules," because the latter grow out of the former. A rule is simply a guiding summary of the salient features of a process. After preparation of the mind the process is presented.

It is carefully observed and studied. After similar examples have been studied, and the essential characteristics noted, the mind sees, grasps, and understands the process. It is then ready to summarize the essential features in the process, and to generalize and formulate its own rules by reducing them to a clear, terse, general guiding statement. The examination of the process shows the child what each step is, and why it is necessary. The rule is simply a sign-board, telling him how to proceed.

Definitions are reached in the same manner, for every definition is a generalization. The examination of things naturally precedes and leads to the definition of them. It is impossible to define a thing until you know what it is. *Examination, then, precedes definition.* For instance, a child that has examined a number of points of land piercing the water, and noted their fundamental characteristics, is ready to define a cape. Likewise, when he has examined a number of similar statements, and studied their essential elements, he is ready to generalize his knowledge and define a sentence. And when the mind has ascended from the perception of individual notions to the conception of the essential qualities of a class, it is ready to summarize them and formulate a definition. In other words, examination and study lead up to, and must, therefore, *precede, definition.*

The same is true of principles, laws, maxims, and proverbs. They stand side by side with rules and definitions. They, too, are the generalization of truth, the convenient condensation of knowledge, and the framework of science. A general could not command an army by directing individuals in the ranks. Control and direction are possible only through officers. Generalizations

are the mind's regimental officers of knowledge. By them it organizes, classifies, controls, and marshals at will the myriads of facts in its vast army. And as the commander-in-chief creates and commissions the officers needed to carry out his instructions, so generalization creates the rules, definitions, principles, and laws necessary to the proper organization of the mind's facts and forces. The head of the army must know his commanding officers, and as many of the privates as possible, but if the army is large he is scarcely expected to know all. So the man of culture may not be familiar with all the minor details of knowledge in its various ramifications, but he must at least know the generalizations of truth, which constitute the framework of all science. His knowledge is extensive in a general way, and intensive only in a limited field. He knows the general principles in many sciences, but is an expert master of details only within a limited range. Hamilton Mabie suggests that culture is always in quality and not in quantity of knowledge.

Culture is in
Quality, not
Quantity.

Generalization is the aim, but not the end, of instruction. It is an essential port of entry, but not the end of the journey. Application is the final destination. But knowledge must be generalized before it can be conveniently applied. Effective instruction, then, must crystallize into generalizations. The mind must be able to recapitulate, summarize, and organize its knowledge. And the fourth formal step in the recitation should give that power. If the essential features of a subject have been presented clearly, tersely, and logically; if the new material has been thoroughly compared with the old, interpreted by it and associated with it, the pupil ought to be able to

summarize and generalize the essentials into rules, definitions, principles, and laws. The power to do this is the best evidence that the preceding formal steps have been effectively taken.

Generalization
is the Aim but
not the End
of Instruction.

Failure to do so may mean that the essential features were not emphasized; that the presentation was not skilful; that the language was confusing; that the plan was not logical; that the process was not comprehended; or that comparison and association were not complete. But it always means that instruction was imperfect, that the presentation was only a clumsy imitation of the real thing, and that the work failed at its most important point.

When the arrow goes wide of its mark it may be due to imperfect aim, an imperfect arrow, or an imperfect bow. The cause may find its source in any part of the machinery of the work, but the result is the same. But whatever the cause, the arrow missed the mark, the shot was lost, and the effort failed. And the instruction that does not lead the child to a comprehension of the terms, rules, laws, and principles of a subject does no better.

2. Generalization comes after Presentation and Comparison. This is an important fact. It is the finger-board that points aright at many a doubtful place in the journey; the light-house that guides the pedagogic mariner around many of the rocks and shoals of failure. Generalizations must follow, and not precede, individual notions in the work of instruction. They naturally spring from and grow out of the examination of individual cases, and hence cannot naturally or logically precede them. The mind thinks its precepts into concepts. The former is the raw material out of which the latter are formed. And as the process of instruction is from raw material

to finished product, so the logical order in instruction is from individual notions to generalized statements. Generalization is the fourth formal step. It naturally comes after presentation and comparison, because their work is essential to its success.

Presentation
and Compari-
son precede
Generalization.

In practice two errors in this connection are frequently noticed. *The first is, in having the child begin the study of any subject or science with its generalizations—that is, with its rules, definitions, principles, and laws.*

The second is in confining the study of any subject or science to them. Both of these errors are sometimes seen in the same school. Children are often permitted to begin and end the study of grammar with definitions and rules. They study nothing else, and know nothing more of the subject. Their English is like the frame-work of a house. It is strong and substantial as far as it goes, but it is not smooth and connected. The frame-work of a house and the generalizations of a science are both necessary; but the one does not make a house any more than the other makes a science. It is needless to say that when the study of this important subject begins and ends with rules and definitions, the children have little power to use the mother tongue. Even in this day of skilful teaching it is not difficult to find schools in which the work in geography, history, physiology, and arithmetic, as well as in grammar, begins, proceeds, and ends with the study of these abstract generalizations.

In guarding against the *first error* three practical suggestions are helpful:

1. *Let ideas always precede words.* To the little child ideas arise through sense-perception, and words are then needed to represent them. After the child thus knows

the color of an orange, he needs the word "yellow" to designate his idea. With little children the natural order is from ideas, or through ideas, to words. With more advanced pupils, who can use a dictionary, the order is sometimes reversed, the idea being derived from the word. But in the schools where ideas precede words there is little danger of beginning the study of a science or a subject with rules and definitions.

2. *Let oral instruction precede text-book study.* This is a practical application of the same law,—*ideas before words*. The child that has not seen a creek or stream can have little idea of a river; while, on the other hand, a small hill visible from the school is sufficient material out of which the child may build his idea of a mountain. The visible is the eye-glass through which the invisible comes into imaginative view. The child must be trained to see the unseen through the seen, the past An Erroneous through the present, the remote through Starting Point that which is at hand. In text-book work, ideas often hide from the child behind words. The language of the text presents the unseen, the invisible, the remote. And without the ideas that spring from his visible environment (the very ideas which oral instruction is expected to give), the child is unable to grapple with the generalizations of the text.

3. *Let percepts precede concepts.* This is the psychological statement of the same law. We have seen that the development of knowledge and the progress of instruction is from the particular to the general,—that is, from percepts to concepts. The simplest form of the thinking process is conception. And the aim of conception is to derive concepts from percepts.

How irrational, then, it is to reverse the process and

ask the child to begin with general notions! Advanced students may have the power to begin with the products of thought, but in the elementary schools it is wise to follow the mind's natural order,—to go from ideas to words, from oral work to text-book study, from percepts to concepts, from particular notions to the higher forms of generalized truth. One of the ends of all instruction is to lead the child to comprehend the terms, rules, definitions, principles, and laws of a subject. And to begin the study of a science at the place where it should end is as unnatural, as unreasonable, and absurd as it is unfair to the child.

The *second error* confines the study of a subject to its generalizations. This error is, perhaps, less frequent in occurrence than the first, but it is equally foolish in practice. And yet in some schools much of what is called instruction consists merely in asking the child to define terms, give rules, and state laws and principles. But the ability to repeat a law is not always evidence of a knowledge of it. “You do not know a thing until you have told it.” This is an old maxim.

A Paradox.

But, paradoxical as it may seem, you can tell what you do not know. For the telling may spring from the memory and not from the understanding. The discussion, comprehension, and application of the principles are far more important than the ability to repeat them. Repetition lies on the surface of instruction, but comprehension and application sound its greatest depths.

The child must know the generalizations of science. They are of paramount importance. We cannot do without them. And the instruction that falls short of this end is no better than the train that stops short of the traveller's destination. It is imperfect, unsatisfactory,

and incomplete. But rules and definitions, important as they are, do not in themselves constitute a science any more than an outline forms a speech. A skeleton is not a man. It must be clothed with flesh and blood and throb with the subtle mysteries of life. You cannot make a great mind by feeding it on outlines, terms, definitions, laws, and principles any more than you can make a great soul by feeding it on moral maxims. To confine the study of a subject to its generalizations is to rob the child of the knowledge of the process that makes the generalization possible and of the application that makes it useful. The former prepares him to formulate his own rules, principles, and laws; the latter to apply them to advantage.

The student who knows the rules of arithmetic may be defective in process and practice. And he who has studied only the generalizations of grammar has missed much of the clearness of thought and the force of expression which the proper mastery of that subject should give. It is well to know the generalizations of science, but it is unwise to confine its study entirely to them. For to be able to derive the rules and principles of any subject, and to use them, is just as important as to know them.

Using General-
izations as
Important as
Knowing
them.

Good teaching, then, avoids both of these errors. It does not begin with rules and definitions, but rather develops them from individual processes. Nor does it confine its efforts exclusively to the study of the abstract generalizations; for this is only part of the work, and the whole is the sum of all its parts, and greater than any of them.

Generalization is the fourth formal step. As such it

is an important, perhaps *the* important, aim of all instruction. It is the north pole of the teaching process. To it the pedagogic needle must ever turn, and by it the mariner on the sea of knowledge must be guided. The inductive process running through presentation and comparison is completed in generalization. In it the mind reaches its highest finished products and culture acquires its finest polish. Nothing remains but to apply these products and use this culture. The mind has now condensed its knowledge into definitions, laws, and principles. The larger the store of its classified generalizations, the greater its culture and the better it is equipped for the acquisition, comprehension, and assimilation of new truth, and for the work of transforming the unknown into the known.

TOPICAL OUTLINE

GENERALIZATION

1. Generalization gives rules, definitions, principles, and laws.
2. Generalization comes after presentation and comparison.

Errors.

- (a) To begin the study of a subject with generalizations.

To avoid this error

1. Let ideas always precede words.
 2. Let oral instruction precede the book study.
 3. Let percepts precede concepts.
- (b) To confine the study of a subject to its generalizations.

PART II

CHAPTER VI

APPLICATION, THE FIFTH FORMAL STEP

Successful application of newly gathered knowledge leads out into the clear sunlight of conscious power.

McMURRY

Whosoever acquires knowledge, and does not practice it, resembles him who ploughs but does not sow.

SAADI

Knowledge is treasure, but practice is the key to it.

It is for want of application rather than means that men fail of success.

ROCHEFOUCAULD

Application is the ally of genius.

D. B. TOWER

It is not a question of how much a man knows, but what use he can make of what he knows.

HOLLAND

CHAPTER VI

APPLICATION, THE FIFTH FORMAL STEP

The school is as much a place for *applying* as for *accumulating* knowledge.—McMURRY.

WE have examined four of the formal steps,—preparation, presentation, comparison, and generalization. We are now ready to consider the last, that of application.

The soul has three functions. It has capacity to know, to feel, and to will. Knowledge arouses feeling, feeling stimulates desire, and desire grows into purpose. The knowledge of the needs of the race arouses feelings of helpfulness. These stimulate a desire to render some aid, and the desire grows into a purpose and a plan by which the end is to be reached. Application is the effort of the soul to execute its purpose in making knowledge productive and useful. It is knowledge acting as a means to an end. Generalization gives the mind rules, laws, and principles. Application is the effort to use them, to make them instruments for service. Generalization supplies the principles of science, but application strives to make them useful. As Laurie says, "Turn to use."

Under this subject two questions arise :

1. Is knowledge a possession or an instrument?
2. If an instrument, how may it be applied?

1. Every generalization has two values, the cultural and the practical.

(a) Knowledge prized as a possession gives culture,

but knowledge used as an instrument gives power. The one makes the scholar, the other the forceful executive; the one the idealist, the other the realist; the one produces the man of theory, the other the man of practice; the one suggests what may be done, the other executes what is possible.

These two types of men appear in every age and in every field of human endeavor. The doctrinaire studies, knows, dreams, speculates, and theorizes. The man of affairs studies, knows, plans, and executes. The one is a master in generalizing, the other a master in applying; the one dwells largely in the realm of abstract speculation, the other in the realm of utility. The world needs both of these types. Human progress is not the result of ignorance, nor of knowledge alone, but of knowledge applied, of thought in action, of intelligence executing its purposes.

Much of the scholarship of the world is found in the school of the doctrinaire. Aristotle, Kant, Bacon, Darwin, and Spencer are representatives. It includes many of the great scientists, the great philosophers, who think and dream and suggest, but seldom execute. In the other school is found some of the scholarship, much of the common sense and good judgment of the world,—nearly all of its executive force. They know, think, plan, and execute. Their aim is not only to know, but to make knowledge practical, productive, and useful. In this class are found many of our great inventors, great generals, great statesmen, the great organizers, the army of skilled workmen, and the men of practical affairs. They test the suggestions of the doctrinaire and divide his philosophy into the visionary and the practical. In

their ranks are found the engineers of the race and the wizards of human progress,—the practical men who tunnel the mountains, wire the ocean, bridge the streams, and harness for man's use the very giants that once opposed him. But useful and numerous as this class is, it does not render the other type unnecessary, for theory must precede practice and suggestion go in advance of action.

(b) Applied knowledge helps to build character. Its aim is to be helpful and useful. When knowledge manifests itself in action, when it works and executes, each effort leaves a tendency to repeat itself. Action thus forms the basis of habit and the raw materials of character. For what the child does daily he will finally do as a matter of habit. And the daily acts and practices are the little rills of conduct that unite to form the great currents of character. Thus, the child that applies his knowledge becomes helpful and useful to society not only by what he does, but by what he is.

The application of knowledge is one of the weakest phases of our school work. We teach laws, rules, and principles, but we do not always give the ability to apply them. Children know the rules of grammar, but have but little power to use the language. They can diagram and parse, but they cannot compose. They know the terms of botany but not the plants in their own yard. They know the science of arithmetic but have little power in it as an art. Geography is often a knowledge of text-book terms, but not of nature. The knowledge of physiology often has no effect upon habit. Thus, by divorcing knowledge and practice we make our school work weakest at its most

Application is
the Weakest
Phase of School
Work.

important point, for knowledge passive is not power. It becomes power only when it becomes active, when it strives to execute some purpose, when it is applied to some end, and when it is wedded to intelligent practice. Education should result not only in scholarship and culture, but also in utility and service.

2. But what kind of instruction will make the child able to apply his knowledge and strengthen the school chain at its weakest link? We can ask the question, but we cannot positively answer it. One or two suggestions, however, may be made that will at least point the way.

(a) *Instruction that emphasizes doing as well as knowing will give the child the ability to apply knowledge.* In such instruction, testing and drill in application of new principles to new examples go hand in hand.

The tool chest of a carpenter has many tools. Each has its name and its use. It is not a knowledge of these tools, however, but the ability to use them that makes a man a carpenter. Knowledge is an instrument. It is a good thing to possess it, a better thing to understand it, but it is still better to be able to use it. The test of an Education. of an education is not what you know, but what you can do with what you know. We learn to do, not by doing alone, but by knowing and doing. And the instruction that requires the child *to use what he knows, to practice what he has learned*, will train him to apply knowledge with ease and force.

The military schools and naval academies are organized on this plan. They give the knowledge that will guide practice, but they give also the practice that will utilize knowledge. The same is true in the manual

training school, the medical school, the trade schools, and the schools of applied science. These schools are organized to put the emphasis on application, to strengthen a defect in ordinary school work, and to supply a demand created by modern conditions. In them practice keeps pace with theory, and the ability to do is prized as highly as knowledge itself.

(b) *Experimental work and laboratory work aid the child in applying knowledge.* They emphasize the importance of application, of skill acquired through practice. And the rapid extension of laboratory methods in elementary schools is a commendable step toward making the school a place for *doing* as well as a place for *knowing*.

(c) *Instruction that is concrete and illustrative helps to train the child to apply his knowledge.* The child that has studied the classification of clauses should illustrate his knowledge with numerous examples. The idea of a complex sentence should be illustrated. A boy learns to apply his knowledge of linear measure by measuring, and of weights by weighing things. A knowledge of how to write a composition is of little value unless the child can illustrate that knowledge in actual practice. In fact, illustrative work is as valuable in training the child to apply his knowledge as in clarifying and fixing thought.

(d) *Instruction that is complete and practical aids the child in applying his knowledge.* Instruction, however skilful, is incomplete in the stage of presentation. Comparison gives more intimate and extended knowledge, but it is not the end. Percepts must be thought into concepts, and concepts into still higher forms, and thus

reach the stage of generalization. This is the end of the inductive part of the process commenced in presentation but it is not the end of the process. Instruction is still incomplete until these general truths are applied. By complete instruction we mean that which ends not in comparison or generalization, but in application. It includes not part of the five formal steps, but all of them.

By practical instruction we mean that which requires the child to use and apply as far as possible what he knows, the instruction that touches the interests of the community in which the pupil resides. The child has a practical knowledge of arithmetic when he can apply its principles to the solution of problems that spring from interests of the community outside the school. In a rural community his problems relate to farm business and farm products. Coal, iron, glass, steel, lumber, and general business outside the school must find a point of contact with the studies within it. His work in language, in arithmetic, in geography, in every branch, becomes not only real to him, and thus adds interest and meaning to school life, but it also makes instruction practical and useful, a thing to be used in the ordinary affairs of life. Everything without the school touches it and registers its influence upon the child, and the work within it should find a utilizing point of contact in the practical application of the life outside. The community and the school stand in reciprocal relations. Environment gives to the school its scope and its character, and school work gives its highest degree of practical completeness in its application to the problems of life around it.

The ultimate goal of instruction, then, is not compari-

son, not even generalization, important as it is, but application. The scholar, the recluse, the man of letters, who cares for nothing beyond culture, may be satisfied with generalizations. But not so with the practical man, the utilitarian, the man of affairs who prizes knowledge not alone as a possession that gives culture, but also as an instrument that may be used in the solutions of the great problems of the race; nor with the great leaders in action who forge the shafts of human progress and build the highways of material advancement. To them education is a ladder up which humanity climbs from primitive things to highest civilization. To them the key to progress is utility, not culture; and utility is the goal of application.

Application is
the Goal of
Instruction.

The vital element in education is spirit. Personality is more potent than presentation; man is mightier than his method. The letter killeth, the spirit maketh alive. And no formal work should ever be permitted to suppress the spirit and the personality of the teacher. And yet the spirit and the personality alone in the school-room are like faith without works. Spirit must give life and influence to effort, and effort must be guided by the best intelligence and follow the lines of least resistance in the accomplishment of its best results. Instruction, then, must call to its aid the best means and all the means at its command.

These formal steps do not suppress the spirit. They add to its power. They cover the whole range of instruction. They sweep its entire field. They give the work purpose and point, edge and scope. They designate and direct its processes, measure and mark its prog-

ress, and generalize and apply its products. The function of each is important and fundamental. They are related and correlated, and yet scarcely co-ordinate elements in the process of teaching. Together they form a unity that is both pedagogical and psychological and in every way worthy of study. And the teacher who understands this unity, who knows the process, the progress, and the product of each step, and how to direct it aright and in harmony with the interests of the others, has control of the very throttle-valve of instruction and can direct and regulate its movements at will. Such a teacher is a master, looking down upon the work from vantage heights of superior power and not up to it from the levels of mediocrity.

TOPICAL OUTLINE

APPLICATION.

1. Values of knowledge.
 - (a) Knowledge as an end—culture.
 - (b) Knowledge as a means to an end—utility.
2. Application of knowledge.
 - (a) Knowing and doing in instruction aids the child in applying knowledge.
 - (b) Experimental and laboratory work aids the child in applying knowledge.
 - (c) Instruction that is concrete and illustrative aids the child in applying knowledge.
 - (d) Instruction that is complete and practical aids the child in applying knowledge.

PART II

CHAPTER VII

THINKING IN THE RECITATION

Thought engenders thought.

G. A. SALA

Those that think most govern those that toil.

GOLDSMITH

Thought is the wind, knowledge the sail, and mankind the vessel.

J. C. HARE

Thinking leads man to knowledge.

PESTALOZZI

Intuition is the clear conception of the whole at once.

LAVATER

Right doing has its roots in right thinking.

Selected

Logic is the art of thinking well.

KAMES

CHAPTER VII

THINKING IN THE RECITATION

Thinking, not growth, makes the man.—ISAAC TAYLOR.

I.--PRELIMINARY STATEMENT.

1. Thinking is the Great Problem of the School. Power to think is the highest function of the human mind. In the gift of that power man is certainly created in the image of his Maker. "The universe of matter and spirit," says Morgan, "is an exposition of God's thought. Chaos became cosmos when matter arranged itself in order according to the divine plan. Man's highest prerogative is to think over again God's thoughts as objectified in the universe, while science, philosophy, and theology are but man's attempts at the restatement of God's thoughts." It follows, then, that the great problem of the school and of the recitation as its chief exercise is to train the child to think; to give him the ability to collate facts, to analyze, classify, and compare them; to discover causes and foresee effects; to infer, deduce, and judge; and, in fact, to exercise successfully each and every power that enters into the complex process of independent thought.

2. Thinking is Possible even in the Elementary Schools. The great majority of children in the elementary schools are very young. We have them during the perceptive rather than the reflective stage. But training to think does not belong entirely to this latter period. The elementary school has a part at least in the work. Reflection and the exercise of the higher faculties come after perception, because they spring from it; but they may be, and often are, closely related in

time. The product of perception is not knowledge, but rather the material from which it is constructed. This raw material may be hoarded away in the mind for future use, but it may also put the thinking processes into active and immediate operation. Even in the elementary school this raw material should be examined, analyzed, compared, associated, and assimilated with similar knowledge already in the possession of the child. And thus some training to think is possible even with small children, and especially with those in the grammar grades and in the high-school.

Two Ways of
Treating the
Raw Materials
of Knowledge.

II.—HOW WE MAY BETTER TRAIN THE CHILD TO THINK.

1. By Demanding his Best Efforts in Thought. There are two great extremes in the work of the recitation, and both should be carefully avoided. One assigns the work to the child,—gives no help and no instruction. It says, in substance, to him, “Work out your own educational salvation with fear and trembling. Sink or swim, live or die, survive or perish by your own unaided self.” And those who survive come forth sturdy, strong, self-reliant in thought and action. The pendulum swings to this extreme in the overcrowded schools, in schools where the teacher assigns lessons and hears the children say them, and where words conceal thought rather than reveal it. The objection to this is that the survivors, those who learn to think, sturdy and self-reliant as they are, are few.

The pendulum of method touches the other extreme in the recitation that does too much for the child. It analyzes, classifies, and outlines everything for him. It removes all difficulties and almost carries him along the

pathway intended to stimulate mental feet. It feeds him on diluted mental food, nurses him in the groves of intellectual inactivity, instead of leading him out into the pure sunlight of independent thought and action.

This is especially true in some primary schools, where the work belittles the child's mental powers, insults his intelligence, and leads him to say, in the language of Dodd Weaver, "I always knowed that!" Number is often chopped up into such infinitesimal pieces, and administered to him in such harmless doses, that he seldom gets enough of it at any one application to start his intellectual machinery. In reading he is fed The Presumption of Brains. upon literary gruel diluted to suit the child's mind. Much of it is so devoid of interest that a critic with a literary microscope would scarcely find enough of anything in it, save twaddle, to interest a man, much less a child. Much of the language work is based on the misapplication of the maxim, "Learn to do by doing." It requires him to do without knowing, to work or say something without purpose or plan, aim or end. The result is a few crude, stale statements, devoid of thought, that tend to blunt the edge of the child's mental tools. In fact, there is floating around in the educational mist that befores some class-rooms a dimly defined notion that the teacher's work consists largely in simplifying subjects, in removing difficulties, in teaching what the child already knows, and in trying to prove to him what is self-evident.

Shun both of these extremes. The work that is too easy is of little value, and that which is too difficult is not much better. Since strength comes from struggling it may be of some value. But strife that ends in failure results in discouragement and disgust, while struggle that ends in victory gives strength, self-reliance, and disci-

pline, inspires the child with a desire for greater conquests, and crowns effort with the satisfaction that springs from success. And the recitation that does most for the child pitches the work at the highest point at which the child's effort is rewarded by his success.

If we would aid the child most in training him to think we must employ the most natural methods; methods that give the child something to exercise his mind upon; something to learn, remember, and apply in unlocking for himself the magic vaults of truth; something that will demand the vigorous exercise of his mind through the processes of analysis, comparison, association, and judgment, and on the very highest level of his best effort.

2. By putting more Emphasis on the Teaching Part of the Recitation. In another chapter we have discussed the parts of the recitation.

(a) The first is the examination. In it the child tells what he has learned about the lesson. He may give it in response to questions that call for the *contents* rather than the *exercise* of his mind. Of course, this examination, guided by such questions, is of little value in training the child to think. It exercises the memory rather than the mind.

(b) The second part of the recitation is the work of instruction. In it, under a skilful teacher, the mind acquires, comprehends, and expresses new truth. It examines new facts, compares them with known truths, discovers new relations, associates them with others, draws from them individual opinions, and reaches certain conclusions. This is pre-eminently the thinking part of the recitation.

(c) The third part of the recitation is the drill. It may or may not be made a medium through which the child

is trained to think. When it degenerates into mere lip service or idle repetitions, or when the matter of the drill is not suited to the mental capacity of the class, it is of little value as an exercise of thought. But skill is a thing of the mind, not of the lips or the hand. And the drill that gives skill demands mental as well as motor action. It grades the material to the mental grasp of the pupils and regulates the rate of motor action at the highest point consistent with clear thinking and right doing. Such drills are helpful in training the child to think.

Skill a Thing
of the Mind,
not of the Lips.

(d) The fourth part of the recitation is the assignment of lessons. This may or may not be made an aid in training the child to think. Merely designating so many pages or chapters is of little value. But in many cases hints may be given, such relations suggested, and such outlines and questions furnished as will lead the child to think rather than to memorize in the preparation of the lesson.

The ordinary, easy-going, tell-and-say, random-shooting, hap-hazard teacher, with incoherent plans and improvised methods, too often avoids these parts of the recitation so valuable in training the child to think, and is content to browse around in the examination field, using the questions that search the memory but fail to stir the mind. He lets his pupils recite and hears them "say their lessons."

"Saying"
their Lessons.

In reading he permits the child to read aloud the paragraph without thought-provoking or thought-suggesting comment or question. If the child has mispronounced no words he simply says, "Next." The study and recitation of a lesson in history, geography, physiology, or grammar is a sort of gorge and disgorge process in which

the undigested truth is drawn forth in the exact form in which it was gathered by the child from the printed page.

In arithmetic the child is asked to solve the problems he has already solved at his seat, the problems he already understands, and perhaps the very problems he solved last year and the year before both at the seat and in the class. Such work is almost worthless even as a drill; "for drill," says Putnam, "loses much of its value when it consists simply in working in class the examples in arithmetic previously wrought, or in the analysis of sentences previously analyzed, or in the mere repetition of any process previously performed." The drill finds its greatest value in the application of known principles to the solution of new problems and sentences. By such a teacher a garbled construction in Latin and a memorized demonstration in geometry are all that are required. In short, if the child can tell what he knows, he will not be asked to think about it.

The drill may be made helpful in this work. But the teacher who would do most for the child in training him to think must see clearly the difference between teaching him and hearing him recite. In the one the child learns, in the other he recalls. The processes are essentially distinct, and, although they may follow each other closely in time, must not be confounded. A child recites when he tells what he has learned; he is taught when he acquires new truth, sees new relations, and arrives at new conclusions. In reciting, the keynote is recollection; in teaching, the keynote is thought.

Teaching is simply causing the mind of the child to do, in the right way and at the right time, that which will enable it to see the new relation, grasp the

Teaching vs.
"Hearing the
Child Recite."

new truth, and reach the new conclusion. And it is only in the teaching part of the recitation that the teacher to any great extent really aids the child in forming habits of thought.

3. By putting more Emphasis on the Thinking Stage of the Learning Process. Aside from the work of application, there are two well-defined stages in the learning process :

(a) The first is the stage of apprehension, in which the mind takes in as wholes the facts or units of truth. It acts in response to that phase of the teaching process that examines the lesson as a unit. In it the mind apprehends as wholes the facts that are presented to it.

(b) The second stage of the learning process may be called the stage of comprehension. In it the mind takes these new units of truth which have just been apprehended, examines them, separates them by analysis into parts, compares and classifies each with similar truth already in the mind, noting the similarities and differences, and then works the new into the old, and all into one assimilated body of truth. This is pre-eminently the thinking stage in the learning process. And after each particular act of comprehension the mind has a larger, richer, and better organized body of truth, and is a stronger and better logical engine because of the new possession and the thinking which led to its comprehension and assimilation. In the stage of apprehension the child uses only the most elementary forms of thought. In comprehension he uses the most vigorous and systematic exercise of the thinking faculties. For to comprehend is to understand ; and to understand is to interpret the new by the old ; and this can be

done only by the powers of analysis, comparison, abstraction, association, and judgment. From this it is readily seen that the teacher who leads the child no farther into the learning process than the stage of apprehension has not done much for him in training him to think.

Comprehension
demands
Thought.

4. By putting more Emphasis on the Questions of Assimilation as Instruments of Thought. The question is the great instrument of instruction. It is the right arm of the teacher's power and the key to his success. The art of questioning is, in a sense, the art of teaching; and a good questioner is generally a good teacher. There are many kinds of questions, but, for our present purpose, two classes are sufficient. One class tests, the other trains; one calls for the contents of the mind, the other starts its machinery; the one results in knowledge, the other in power. The first may be called the questions of acquisition, the second the questions of thought.

(a) Now, the question is not only the instrument of instruction, it is the very throttle-valve that starts and controls the thinking process. And these two classes of questions correspond with, lead to, and bring about the two stages in the learning process. The questions of acquisition lead the child to apprehend the facts of a lesson, while those of thought demand a comprehension of them. The questions what? which? when? and where? are primarily questions of acquisition, as Roark suggests; they seldom lead the child much beyond the stage of apprehension.

(b) The questions wherefore? why? and how? and questions that call for causes and results, are, as a rule, questions of thought. They help to carry the learner

from the stage of apprehension over the bridges into the realm of comprehension. They are philosophic questions. They call for causes, they examine processes, they search for results. In answer to the questions of acquisition, the recollection of the child has only to dip into the memory and bring out an apprehended fact. But there is no ready-made, hand-me-down answer to the questions of assimilation and thought. By them the mind receives an order for a special product; and the thinking processes must manufacture that product before it can be delivered.

Questions of
Assimilation
and Thought.

5. By putting more Emphasis on Philosophic Teaching. In every system of schools you may find three kinds of teachers,—the mechanical, the experimental, and the philosophical. They work in the positive, comparative, and the superlative degrees of the profession. Each, in his peculiar way, produces a product fashioned to some extent in the image of its maker. Cobblers can cobble, painters can daub, but only an artist can produce a work of art.

(a) The mechanical teacher does the work blindly as he has seen it done under similar circumstances, without purpose or plan, why or wherefore. Such a teacher is only a cobbler at best; but he works not with leather soles, but with human souls. His work is to be tolerated, not commended; and his product pitied, not condemned. This is the class in which most young teachers begin. It is, therefore, no great disgrace for a teacher to start in that class, but it is not to his credit to remain in it long. The mechanical teacher uses largely the questions of acquisition, and consequently does very little in training his pupils to think.

(b) The experimental teacher is the one who is dissatisfied with the results of his work, but does not know just what to do to make them better. He therefore experiments with every method, suggestion, or device that may chance his way. He is without definite aim or definite plan. He does not foresee the end, and therefore cannot organize the means. The character of his work is necessarily narrow and superficial; and since the questions of acquisition lie largely on the surface of truth, they constitute almost exclusively his stock in trade. Like the mechanical teacher he may occasionally start the thinking faculties of the child's mind; but if he does, it is by accident, and not through any intelligent, fixed purpose. He is in a condition of professional unrest. He is looking for light, and if he finds it his work may cease to be transitional and experimental and become philosophical. But as long as he is in this unsettled condition, this comparative degree of the profession, his work in training the children to think will be very unsatisfactory.

(c) As soon as the mechanical teacher is dissatisfied he tries everything he reads; he studies and begins to think; and when he has thought his way from darkness into light he takes the superlative degree and becomes a philosophical teacher. This teacher looks down on his work from a lofty standpoint,—the point where history, psychology, pedagogy, and scholarship meet. He sees something of the child to be taught, his nature, his capacity, his character. He sees something of the subject which he is to master. He sees something of the manner in which that truth is to be brought into right relations with that mind, so that it will not only stimulate thought, but the thought that is desired. He sees the

end from the beginning; forms his plans and organizes his means by which that end is to be reached; and thus, in a measure at least, is enabled to do the right thing in the right way and at the right time. He uses the questions of acquisition because his pupils must apprehend facts; but the magic wand of his power is the question of thought. With it he intentionally starts the mental action that must result in mental power. Such a teacher always has a strong grip upon success, for "philosophy," says Devere, "makes the mind invincible."

In the upper grammar grades and in the high school, much of the time of the recitation should be given to the discussion of the subject matter. This leads to the comprehension and assimilation of what the child has apprehended in the preparation of the lesson. The lack of work and study, so distressingly prominent in some schools, and the inability of the child to make suitable preparation, make it necessary for the teacher to spend much of the recitation period in trying to have the child apprehend what he should have apprehended in the proper study of the lesson. Thus the recitation ends just where the important part of it should begin, and there is no time left for that discussion of the subject matter which will result in its comprehension and assimilation.

Discussion of
the Subject
Matter as an
Aid to its Com-
prehension.

In the primary grades much time must be devoted to the apprehension of the subject matter, because the child has little power to get it from the printed page. But in the higher grades, where he has to some extent acquired the art of study, the emphasis must be placed on the thorough comprehension of the facts. The philosophical teacher is the thinking teacher. He sees the

value of this part of the work, and, having been over the route himself, he knows how to stimulate others in their progress along it, and thus is the most helpful of all teachers in training the pupils to think.

6. By putting more Emphasis on Observation and Reflection as Sources of Knowledge. Observation and reflection are of prime importance in the education of every child. The results that come from them are of the highest order. And the teacher who neglects either fails at a vital point.

(a) Taking a practical view of the subject, it may be said that the child acquires truth by observation, intuition, reflection, and testimony. In the average school the emphasis is placed on testimony. Under the pressure of this emphasis nearly all that the child acquires comes to him second-hand,—from the testimony of the teacher and the testimony of the author. His beliefs and conclusions, if he has any, are founded on hearsay evidence. The faculties that should give him the most accurate and original knowledge are kept in the background, while testimony reveals all.

(b) In intuition the mind grasps certain truths and reaches certain conclusions immediately, and without the intervention of the thinking process as directed by a teacher. We can do little to aid the mind in thus acquiring truth, and may therefore dismiss it entirely from any discussion intended to throw light on the subject from the teacher's standpoint.

(c) But observation as a source of knowledge deserves some consideration. It has not received the attention in many schools that its importance demands. Nature study as a means of discipline is an effort to restore observation

Nature Study
demands
Observation.

to its rightful place. The child has the testimony of teachers and authors about nature, but nature study is an attempt to have nature speak directly to the child through his powers of observation. The mental product of observation is the percept, and percepts, whether gained directly by observation or grasped through intuition, are the elements of knowledge.

This is nature's method of giving the child original knowledge, and we are not likely to improve upon it. It touches the mind on the emotional as well as on the intellectual side. This gives observation a great advantage over testimony. The child may know something of nature through the aid of books; but if he gets his knowledge by observation, he is likely to get with it a love for it. Observation is one of nature's plans of stocking the mind with truth. It gives the elements of knowledge in the way in which they were intended to call the faculties into operation. And the wise teacher, in the difficult problem of training the child to think, will not ignore the service that observation can render.

(d) Reflection as a source of truth is much neglected. We are so busy acquiring it by testimony that we seldom take time to reflect. And yet, as Burke says, "To read without reflecting is like eating without digesting." By reflection I mean that power by which we compare, discover, and decide. In this process there are three stages. The first gives the child general notions. The result of the second is a conclusion technically called a judgment. To reach it the mind must examine, compare, discover, and conclude. It begins by examining ideas and objects, proceeds by discovering their relations, and concludes by affirming or denying something about them. In the third stage the mind begins with a com-

parison of two conclusions, proceeds by discovering a new conclusion based upon, deduced from, or growing out of their relation, and ends by stating it.

Teachers may not clearly understand the thinking process when described in psychological terms, but they do understand what is meant by the simple words *examine, compare, discover, conclude*. and *state*. And when the child does these things in the order named he is thinking; for to reach a conclusion by this route and thus form an opinion is to complete an act of thought.

If, then, we would train a child in the power of thought, great emphasis must be placed on reflection as a source of truth; for this is the never-failing fountain whence come his decisions, conclusions, opinions, beliefs, and arguments.

Composition springs from reflection, and, if rightly taught, is a great aid in training the child to think. It is originality of thought and expression that distinguishes a composition from a compilation. And this originality always finds its source in the reflection of the writer. If the composition is of the argumentative form, it is one of the greatest agencies in training the child to think, for then composition sets forth the writer's conclusions, opinions, and arguments; and the power that reaches conclusions, furnishes opinions, and formulates arguments is the power of thought. The source from which this power must spring is the writer's own reflection.

SUMMARY

The recitation will become a better instrument for stimulating thought:

1. When we distinguish clearly between teaching and reciting.

2. When the emphasis in the recitation is placed upon instruction.

3. When we make a better use of the questions of assimilation and thought.

4. When we lead the child beyond the stages of apprehension into the realm of comprehension.

5. When a larger number of teachers climb the dimly-lighted stairway of mechanical and experimental work and reach the broad platform of philosophical instruction.

6. When observation as a source of knowledge is emphasized, and the natural doorway to the child's mental machine shop is thus thrown wide open, that the fuel of truth may have free access to the engines of thought.

7. And, finally, when reflection shall become a fountain of truth to the child, whence shall issue streams of decisions, opinions, and conclusions, nay, even arguments, not of the teacher and the text, but of the child, occasioned by the exercise of his own mind upon the subject matter.

TOPICAL OUTLINE

THINKING IN THE RECITATION

I. —PRELIMINARY STATEMENT.

1. Thinking is the great problem of the school.
2. Thinking is possible in the elementary schools.

II. —HOW WE MAY BETTER TRAIN THE CHILD TO THINK.

1. By demanding his best efforts in thought.
2. By putting more emphasis on the teaching part of the recitation.
 - (a) The examination.
 - (b) The instruction.
 - (c) The drill.
 - (d) The assignment of lessons.

3. By putting more emphasis on the thinking stage of the learning process.
 - (a) Stage of apprehension.
 - (b) Stage of comprehension.
4. By putting more emphasis on such questions as are instruments of thought.
 - (a) Questions of acquisition.
 - (b) Questions of thought.
5. By putting more emphasis on philosophic teaching.
 - (a) Mechanical teaching.
 - (b) Experimental teaching.
 - (c) Philosophic teaching.
6. By putting more emphasis on observation and reflection as sources of knowledge.
 - (a) Testimony as a source of knowledge.
 - (b) Intuition as a source of knowledge.
 - (c) Observation as a source of knowledge.
 - (d) Reflection as a source of knowledge.

PART III

THE RECITATION CONSIDERED IN
ITS METHODS

PART III

CHAPTER I

GENERAL METHOD IN THE
RECITATION

The study of methods of instruction constitutes one of the most important divisions of educational science.

GABRIEL COMPAYRÉ

Despatch is the soul of business ; and nothing contributes more to despatch than method.

CHESTERFIELD

Induction is an inference drawn from all the particulars.

SIR WILLIAM HAMILTON

Make the most of time, it flies away ; yet methods will teach you to win time.

GOETHE

Method is like packing things in a box ; a good packer will get in half as much again as a bad one.

LORD BURLEIGH

CHAPTER I

GENERAL METHOD IN THE RECITATION

No undertaking can be carried on successfully without method.—
FRANKLIN.

IN a former chapter we studied the subject of presentation as the second formal step in the recitation. We examined its external characteristics and the inner activities that ordinarily respond to and result from them. In this chapter we are to study the methods of presentation; to note their fundamental characteristics; to discover, if possible, their philosophy, and to see how they dominate the individual methods of the recitation.

I.—METHOD DEFINED.

The word "method" means manner. The purpose of presentation is to bring truth to the mind in such a way as to arouse and sustain its activities and to direct them to a specific end. And the method is simply the manner in which this is done. It is a way of reaching a desired end by a series of intermediate steps that lead to it, or by a series of acts that tend to produce it.

But method also means order. A method of teaching, then, is an orderly way of presenting truth to the mind and of directing its activities. And order primarily

suggests system and plan. Hence a method of teaching is a systematic plan, involving a series of intermediate and orderly acts which point toward a desired end and tend to produce it. This

System and
Plan in
Method.

systematic plan implies an aim or end, a knowledge of the means that will produce it, and a specific and progressive order in which each shall be considered, and how each shall be applied to the work at hand. Method sees the end from the beginning, it knows the intermediate steps that lead to it, it determines the order and the manner in which each shall be taken, and thus rebukes all blind, hap-hazard, experimental effort, and removes as far as possible all guesswork from the classroom.

The goal of all instruction is knowledge, power, or skill. The first is acquired, the second is the strength resulting from mental action, and the third is the facility that comes from practice. Knowledge is the fuel that feeds the engines of mental action, and power and skill are the results of this action. A method, then, is a way of presenting facts to the mind in order that it may acquire knowledge and arouse the activities that will result in the desired power or skill.

A material illustration may help to throw some light on the subject. A water-mill stands beside a stream; its machinery is in perfect order; the wheat is in the hopper; but the mill will not accomplish its purpose until a sufficient quantity of water is applied to the wheel in the right way and at the right point. There is an abundance of water in the stream and the box above the wheel is filled, but, regardless of this, the machinery remains inactive until the miller lifts the flood-gate and allows a quantity of water to pour down upon the wheel and start it. And that supply of water must be continuous and regular until the work is done. So method lifts the flood-gates of the senses, and so presents the subject matter of a lesson to

The Goal of
Instruction.

The Flood-
gates of the
Senses.

the mind that the latter is aroused and directed by it, and has, as the immediate result of its effort, increased knowledge, power, or skill.

Skilful teaching is right methods in actual operation. The skilful teacher is the one who does the right thing, in the right way, at the right time; and doing this is the very essence of method.

II.—THE FUNDAMENTAL CHARACTERISTICS OF METHOD.

The human mind has many powers, and a discussion of them would carry us beyond the limits of this lecture. Two of these powers, however, are fundamental. First, it can acquire knowledge; and second, it can reflect upon or think about its acquisitions. Its acquisitions come to it either through observation or through the medium of language, and reflection works them up into the higher forms of thought. Acquisition and thought are the basic powers of mind. All the knowledge the child can ever possess must come to him through the acquisition of truth or through its elaboration by the processes of thought, and the stock of his mental power and the extent of his skill are the results of them.

Around these two fundamental powers of the mind cluster all the knowledge and principles that tend to make teaching a fine art. These principles are the switch-boards of method by which the teacher through presentation arouses, controls, and directs the currents of mental action. Perhaps it would be more appropriate to call them the key-boards of pedagogy on which the teacher must play in the presentation of the subject matter of a lesson, and through which he must operate in arousing to harmonious vibrations the strings that are

within. And as familiarity with the key-board and skill in its use as well as a knowledge of the laws of harmony are essential qualifications of the expert musician, so familiarity with the key-boards of pedagogy, together with a knowledge of the laws of acquisition and thought, are the essential qualifications of the skilful teacher. And as certain combinations of tones, movements, and parts determine the character of the tune, so certain processes, operating through the laws of acquisition and thought, determine the work of the teacher and the character of the method.

The subject of method has two phases, the theoretical and the practical. The one is a question of philosophy, the other a question of practice. All practice ought to be sound theory applied. That is the shortest and surest way to success, for the art of teaching is simply the art of putting theory into effectual practice. The philosophy of method comes first, its application follows. The philosophy is difficult, but the ability to apply it is far more so. The former is a thing of the mind; it may be studied, explained, and understood. But the mastery of method is a thing of practice, and can be acquired only through the conscious or the unconscious application of this philosophy to actual class-room work.

Theory as the
Basis of
Practice.

Our study, then, of the fundamental characteristics of method must be largely theoretical. We can only survey the field of theory, examine its philosophy, and point out its principles, leaving the comprehension and the application of them to the teacher.

In the literature bearing on this subject all methods are classified either as analytic or synthetic, inductive or deductive, objective or subjective, or empirical or rational

Each of these four classifications is complete in itself, including the theoretical aspect of all methods. The different classifications arising simply because of the different view-points from which the subject is examined and considered practically, some of them will be found to be scarcely more than a different name for the same thing.

1. Analytic and Synthetic Methods. The terms analysis and synthesis are not very clear when applied to methods of instruction. In the literature of pedagogy they seem to have no definite or precise meaning. The clearest and most accurate thinkers fail to agree in their use of them, and Compayré suggests that since they bring nothing but confusion and obscurity, he would be glad to see them disappear from the vocabulary of pedagogy. But since they are used to designate certain methods, it will be necessary for us to examine them.

Vagueness of
Terms.

The mind learns by distinguishing one idea from another or by uniting one with another. Separation and combination are fundamental powers. The one is termed analysis, the other synthesis. And any method dominated by the former process is called analytic, while one based upon the latter is synthetic.

No method, perhaps, is purely analytic or synthetic, but is rather a combination of both processes, the one complementing the work of the other. And yet one process may so dominate a method as to name it.

(a) *Analysis.* Analysis is one of the first efforts of the mind. As a rule, we first examine a thing as a whole and note its general characteristics. The thing examined may not be a unit in itself,—it may only be a

very small part of it,—yet the mind examines it first as one complete whole.

But to gain a more intimate and exact knowledge it separates it into parts and makes each part a unit for examination and separation. And thus the mind proceeds to narrow the field for investigation in its endless quest for more minute and accurate knowledge, each part becoming in turn a unit for examination and study.

The first view of a house, for instance, reveals to the mind only its general form and appearance as an object. This first view is too vague to be of much service, and upon a more careful examination it discovers parts, doors, porches, and windows. These are in turn examined and their parts are noticed. Narrowing the field of investigation everything else is dismissed for the time, as the mind discovers the design, for instance, of an art window; and on and on the investigation may continue, narrowing the field of observation in an effort to gain more minute knowledge.

Analysis is thus a process of separation and of narrowing the field of investigation. It looks at a whole and recognizes that it is different from other things; it separates it into parts and distinguishes one from the other by recognizing that one is what the other is not.

(*b*) *Synthesis*. Synthesis is the process by which the mind unifies parts into wholes. It is a process of combination, not separation. It is, therefore, the very opposite of analysis. The one looks for differences by which parts are separated. The other looks for similarities by which facts are related, grouped, classified, and united. It puts facts with similar fact, element with element, and thus unitizes the mind's possessions. "We analyze,"

says Sir William Hamilton, "only that we may comprehend; and we comprehend only inasmuch as we are able to reconstruct in thought the complex effects which we have analyzed into their elements." And Baldwin suggests that the mind gains the mastery in two ways: "We divide to conquer, and unite to understand."

Analysis and synthesis, then, are complementary processes; either alone is incomplete, but together they form the whole circle of psychic action. "Each," as Sir William Hamilton remarks, "is the relative and correlative of the other." And instead of being two separate processes they are rather the necessary parts of one.

(c) *The order in which the parts of a subject are studied.* But while the terms analytic and synthetic are vague when applied to methods, they are more definite when we use them to designate the processes of separating or uniting the elements of which anything is composed. And they are equally definite when used to name the order in which the parts of a thing may be examined. This order may be from the whole to its parts by analysis, or from the parts to the whole by synthesis.

When the study of a subject begins with a consideration of its unity and proceeds to a consideration of its parts the order is analytic. This is the logical order in which the matter in many of the sciences is arranged in the ordinary texts. It is to be distinguished from the chronological order in which the facts of history are generally studied.

For example, when the study of geography begins with the earth as a unit, separates it into land and water, divides the land into continents, the continents into countries, and the countries into states, the order is analytic. In like manner the analytic

Analytic Order
of Study.

order of examining the facts of grammar begins with a consideration of the subject as the science of language divides it into its principal subdivisions, and then takes up the study of each in turn.

The knowledge of a subject thus studied is of the highest value. No student is master of a science until he knows it in its unity, its analytic parts and their relations. But while this is true, the analytic order of study is not always the best to be followed in the elementary school.

When you start with the consideration of a science in its unity, it will be necessary for the child to identify that unity; this is to know just what it is and how it is distinguished from other unities. That brings him face to face with the definition of the subject to be studied. Now a definition is an exact statement of what are regarded as the constituent parts of the thing to be defined. And in the elementary grades where the child has no knowledge of the subject it is impossible for him to comprehend this definition of the thing or of its constituent parts.

Take, for example, the study of grammar from this analytic standpoint. In its unity it is the science of language and the art of using it. Usually it is divided into four parts,—orthography, etymology, syntax, and prosody. It must be evident that the child who is beginning the study of language is not prepared to understand these terms and definitions. Indeed, three or four years of the study of the subject will scarcely make them clear to him. The same is true with reference to the study of geography, physiology, and arithmetic,—in fact to any study.

It is obvious, then, that while this analytic order of

study has an important place in the advanced grades of the elementary school, it is not the order by which a child should begin the study of a subject. To attempt to teach an abstract definition of the unity of a science to a child who knows nothing about it, is asking him to interpret the unknown with an empty mind. Such a process is absurd. You might just as well expect a man to go into business without capital. An empty mind cannot acquire knowledge, it cannot even attend to its presentation. And it is impossible for a mind empty along a given line to grapple with and understand a definition setting forth the essence of the thing it would know.

The Child
cannot begin
with
Definitions.

The child must always start with something that is known. He must measure, weigh, and know the unknown by and through it. He must learn with what he has. There is no other way. Good teaching, as we have suggested, always trains the child to use what he has in acquiring what he wants. It proceeds from the "known to the unknown." And it is folly to start with the unknown and strive to know the new thing by or through it.

The Child
learns with
what he has.

The synthetic order of examining the parts of a science is generally preferable in the lower grade of the elementary school. It avoids asking the little child to begin the study of a science with its terms, definitions, and generalizations. It starts with some individual fact which the child knows, and which in some way relates to the thing to be known, and proceeds to enlarge his circle of knowledge on the subject and thus leads him up to the point where his expanding intellect can comprehend the subject in its unity, its analytic parts, and their relations, as embodied in its terms and definitions.

2. **Induction and Deduction.** Analysis and synthesis seem to be the fundamental characteristics by which the mind in the process of acquisition examines objective knowledge, while induction and deduction seem to belong more particularly to the methods by which the mind deals with subjective material in the processes of thought. They seem to be modes of thought by which the mind, through judgment and reasoning, elaborates its objective knowledge into higher finished forms.

(a) *Induction as a mode of thought.* Induction is the method of thought by which the mind reasons from the particular to the general. It examines individual cases, and through analogy affirms that what is true of them is true of all in the same class, and thus proceeds from part to whole, from particular to the general, and from the individual to the universal.

The reliability of inductive conclusions depends upon

Reliability of	the number of individual cases examined
Inductive	and the analogy existing between them and
Conclusions.	the class of which the conclusion is affirmed.

For example, a man who knows nothing whatever about corn, after husking a hundred ears and finding each yellow, may through induction reach the general conclusion, "All corn is yellow." A more extended investigation of individual cases and of kinds would revise this conclusion by showing that some kinds are white, and that occasionally red specimens are found in each kind.

As a rule, hasty inductions are not very reliable. Caution and wisdom make haste slowly, but rash judgment jumps to conclusions. In order to give the inductive conclusion value, then, two things are necessary:

1. A large number of individual cases should be carefully and critically examined.

2. The individual cases examined must be similar and analogous, and each must belong to the general class of which the conclusion is to be affirmed.

Conclusions must rest upon facts, and general conclusions that are to be trustworthy must be based, not upon a few individual cases, but upon many.

(b) *Deduction as a mode of thought.* Deduct means to lead forth or to draw from. As a mode of thought it is the manner in which a general truth, already known or assumed, is led out to a particular case by means of an intermediate term equally connected with both. Thus the general is brought down into the particular, affirming of the latter the qualities true of the former.

The syllogism is often employed in both these modes of thought. This consists of three propositions. The first and second are called premises, the third a conclusion. The following syllogism will serve as an illustration.

The Syllogism.

1. All virtues are commendable.
2. Charity is a virtue ; therefore,
3. Charity is commendable.

In this case the general truth already accepted or established is that "all virtues are commendable," and by deduction this general truth is brought down and affirmed of charity because it is a virtue. This conclusion is based upon the fact that whatever is true of a class as a whole is true also of every individual in the class.

In the syllogism given above the first proposition is the major, the second the minor premise, and the third the conclusion. The major premise affirms that virtues are included among the many things that men are willing to commend, either because they are accepted or have been proven worthy of commendation. The minor premise

affirms that charity is included in the class of things termed virtues and is regarded as one of them. These being true, the conclusion naturally and logically follows.

The value of a deductive conclusion depends upon two conditions :

1. The major premise must be true.
2. The minor premise must be related to or included in the term or class designated by the major.

In ordinary reasoning, part of the syllogism is often suppressed and is only understood. For instance, you may say, "John cannot lift a man's load ; he is only a child."

In this the conclusion is given first, the minor premise second, while the major is entirely omitted. If expressed in full the syllogism would be as follows :

1. A child cannot lift a man's load.
2. John is a child ; therefore,
3. John cannot lift a man's load.

Another form is to say, "John cannot lift a man's load, because he is a child." This states the conclusion, and, with the first premise understood, assigns the second as the cause of the conclusion. This form is very important in teaching children. It couples the cause so directly with the conclusions that even the dullest mind is likely to see. The teacher should not weaken the foundations of faith that looks beyond the horizon of sight, but he should reinforce the foundations of fact with the strongest logic at his command.

(c) *Inductive and deductive methods.* The process of thought that dominates a method names it.

The inductive method leads the child to apprehend the idea before it is given the word that stands for it ; to understand the process by examining individual cases

before the general rule is stated; to know the thing before it is defined; and to comprehend underlying principles before they are formally stated. It begins with individual cases and advances toward general rules and principles.

Inductive
Methods give
the Idea
before the
Word.

It aims to have the child so understand individual cases and processes that he may derive the general rules and principles from them.

In arithmetic it begins with a concrete example, and by studying it leads the child to a discovery of its underlying principles and to a knowledge of the rule for the solution of all similar problems. It approaches the subject of elementary geography through the facts and the phenomena in the child's environment, advances by carefully investigating the processes of nature, and finally grasps the laws and generalizations to be used in the complete mastery of the subject. It makes the particular things that speak directly to the child the spectacles through which he is to see the general features of the subject.

In grammar the inductive method gives the learner the idea of the phrase, the clause, the sentence, the part of speech, in fact of any term or thing, before it asks him to define them. In short, this method attacks all subjects in the primary grades through oral investigation of concrete cases, and in every grade through the examination of individual examples, processes, and illustrations, and through them rises to the comprehension of rules and generalizations.

Seeing the
General
through the
Particular.

Deductive methods are those that start with a study of general principles and lead down and out to the consideration of these principles in their application to par-

ticular cases. They would derive ideas from words, solutions from rules, and a knowledge of the things defined through the definitions.

Deductive methods reverse the processes of induction. Generalization, including the rules, terms, laws, and principles, is the goal of inductive instruction. In deductive instruction these are the beginnings, not the ends. To derive general truths is the dominating aim of inductive work. But deduction strives to verify and apply them. In short, inductive methods examine individual cases and discover and state general laws and principles. While deductive methods examine general principles and strive to lead the child to understand, to verify, and to apply them.

From this discussion it is obvious that inductive and deductive methods are both to be employed. The former may predominate in one grade, the latter in another; but each must supplement and reinforce the work of the other, and frequently both are employed in the mastery of a single fact. Both are needed, and the mind trained by the use of both is superior to the mind trained by the exclusive use of either.

Inductive methods should predominate in the elementary school, for ideas should precede words, facts should go in advance of principles, and processes should always lead the way to rules in the training of little children. But while this is true, deductive methods hold an important place in training pupils to apply the general rules and principles acquired through inductive processes.

Some parts of a subject are more easily presented by inductive methods than others. Much of the work in elementary geography, language, physiology, and arith-

Induction
derives Prin-
ciples;
Deduction
applies them.

metic is very readily approached by them. But when the stage of generalization has been reached in the study of any fact or lesson induction has largely accomplished its purpose, and should give place to deduction in the application of general principles to individual cases. Induction may carry the work of instruction up to the fourth formal step in the recitation, but the fifth step must be taken by deduction. In a word, inductive methods should give to the child a comprehension of the general principles which deduction applies.

3. Objective and Subjective Methods. In the study of methods the student frequently meets these terms, and while they do not take rank with induction or deduction, yet they hold an important place in the discussion of the subject.

Knowledge is of two kinds. The source of one is external, that of the other internal. One kind reaches the mind from the external world through the senses, the other arises in the mind as the result of thought. The first may be termed objective, the second subjective knowledge.

(a) *Objective methods.* The methods by which the mind examines things are objective. The child may study things or he may study about them. His knowledge of botany may be derived from the plants he has examined or from the books he has studied. The farm and the field, the stream and the slope, are sources of geographical knowledge just as truly as the book that tells of things beyond the pupil's environment. Hamilton says, "Objective means that which belongs to or proceeds from the object known, and not from the subject knowing, and thus denotes what is real in opposition to what is ideal, what exists in nature in contrast to what

exists merely in the thought of the individual." Objective methods, then, are those that deal with things. They are the methods of observation, of sense-perception, that give us the raw materials of knowledge.

It is evident that objective methods occupy a most important place in the kindergarten and the elementary school. The numerous devices in which objects are employed to teach form, shape, number, and color all fall under this head. The sand-box, the school-yard, and the neighborhood are employed to give the child the fundamental facts of geography; the scissors in cutting paper into various shapes; the yard-stick in measuring length, and the scales in giving accurate notions of weight, all work more or less through objective methods. The fundamental idea in nature study is that nature shall testify directly to the child, and that his knowledge of the subject shall be acquired through objective methods. Indeed, the school that does not employ this method in giving to little children their elementary notions of things is out of harmony with the spirit of modern pedagogy. The methods of instruction employed before the age of books were largely objective. They were primitive, but they were natural, and since they are natural they are likely to remain. They are the basis of every form and phase of the modern object lesson.

It is to be noted that objective methods are employed mainly in presenting objective knowledge. Their work is generally accomplished in presentation, the second formal step in the recitation. Comparison, generalization, and application, as formal steps, deal with knowledge after it has ceased to be objective.

Objective methods lend themselves with great facility in particular fields. In geography, physiology, and arithmetic they may be used to great advantage, and in the domains of chemistry, botany, physics, zoology, and geology they are especially helpful.

(b) *Subjective methods.* Subjective methods are those by which the mind elaborates the raw materials of knowledge, the products of sense-perception into higher finished forms by the processes of thought. Objective methods are primarily methods of acquisition, while subjective methods are methods of thought. The product of the former are primary ideas and percepts; the products of the latter are concepts, conclusions, and generalizations. The processes of the one are observation and physical investigation; those of the other are conception, judgment, and reason. Subjective methods deal with the things of thought in distinction from the things of sense. They relate to and sweep the realm of mind in contrast to the realm of things. They are the methods that accept and elaborate objective knowledge, after it has crossed the threshold of the mind and has thus become subjective.

Subjective
Methods deal
with the
Things of
Thought, not
Sense.

These two methods, like those of induction and deduction, must supplement and reinforce each other. Objective methods give primary ideas of things. But the mind cannot keep its possessions in the form of elementary notions. They must be worked up and generalized into terms, principles, and laws. These, rather than the crude, unrelated material, are the tools with which it works. Subjective methods, then, are necessary to complete the work which the mind undertakes in dealing with material things.

4. **Empirical or Rational Methods.** Empirical and rational are practically other terms by which subjective and objective methods are designated. And yet it may be in place to speak of them separately.

(a) *Empirical methods.* Empirical methods are those through which we gain knowledge by observation and experience. They are the methods of the laboratory, the shop, the factory, and the field. Chemists, physicians, draughtsmen, mechanics, and artisans get much of their training through these methods. These are the methods of experiment, of observation, and of actual practice in contrast with those of inference and thought.

All such methods, however, must be guided by established principles and laws, or little progress will be made.

Practice must be guided by Established Rules and Principles. A laboratory is of little value unless it is used aright. Without access to the garnered truth of the race in the field of dentistry, it would take a young man a long time to acquire skill and efficiency by empirical methods. The attorney who practices law without a knowledge of its principles will not win many cases. The methods of the physician must necessarily be somewhat empirical, but if his practice is not guided by scientific knowledge it will take him a long time to rise above the level of quackery. So empirical methods to accomplish their purpose must not be idle and aimless, but founded upon and guided by well-established principles and laws.

(b) *Rational methods.* These methods relate to mind in opposition to those that relate to matter. They belong to the realm of thought, not things, and are the methods by which the mind reasons in distinction to those by which it observes and examines material things.

The similarity in certain features of these fundamental

characteristics of method is very marked. Empirical methods are those that depend upon observation and experiment. And objective methods deal with objects or things. But we know things by experience and observation. Hence empirical methods are practically objective. In like manner rational methods are practically subjective. These terms may not be identical throughout the realm of metaphysical thought, but within the scope of ordinary class-room work their differentiation is unnecessary.

The Similarity
of Certain
Methods.

In the same way empirical methods are generally inductive, and the fields of truth to which these methods apply with greatest facility are almost identical.

This similarity may be seen also between analysis and deduction and between synthesis and induction. Analysis passes from a consideration of the whole to a consideration of its parts. In deduction the mind passes in thought from the general to the particular. But the general often springs from the whole and the particular from its parts. And so this similarity may be traced between analysis and deduction and between synthesis and induction.

But analysis and synthesis seem to apply more particularly to methods of examination, of physical separation and combination, while deduction and induction are modes of thought. The former are the methods by which the mind examines the facts, investigates the conditions, and acquires the raw materials that are to be the basis of thought; the latter are the modes by which the mind moves forward by logical inference to the direct conclusions arising out of them.

All methods, then, are analytic or synthetic, inductive or deductive according to the character of the process

that dominates them. And those that deal with things and acquire knowledge or power through observation and experience are objective or empirical, while those that elaborate the crude material that comes from the objective world through the higher processes of thought are subjective or rational.

TOPICAL OUTLINE

GENERAL METHOD

I.—METHOD DEFINED.

II.—FUNDAMENTAL CHARACTERISTICS OF METHOD.

1. Analytic or synthetic.
 - (a) Analysis.
 - (b) Synthesis.
 - (c) Order in which the parts of subject are studied.
2. Inductive or deductive.
 - (a) Induction as a mode of thought.
 1. Number of inductions.
 2. Character of inductions.
 - (b) Deduction as a mode of thought.
 1. The major premise must be true.
 2. The minor premise must be related to the major.
 - (c) Inductive and deductive methods.
3. Objective or subjective.
 - (a) Objective methods.
 - (b) Subjective methods.
4. Empirical or rational.
 - (a) Empirical methods.
 - (b) Rational methods.

PART III

CHAPTER II

INDIVIDUAL METHODS IN THE
RECITATION

Marshal thy notions into a handsome method.

FULLER

It is only dislocated minds whose methods are spasmodic.

WILMOT

To know how to put a good question is to have gone a long way toward becoming a skilful and efficient instructor.

Selected

The method of teaching which approaches most nearly the method of investigation is incomparably the best.

BURKE

Methods should vary according to the subjects taught.

BACON

CHAPTER II

INDIVIDUAL METHODS IN THE RECITATION

A good method favors self-teaching.—MARCEL.

HAVING studied the general characteristics of method it is our purpose now to examine the individual methods used in ordinary class-room work. We desire to see if possible what each particular method is, its contents and its limitations, and to inquire what are its peculiar advantages or disadvantages both to teacher and pupil.

I.—THE LECTURE METHOD.

This is a simple, direct, clear, strong, logical presentation of the subject matter of a lesson to a class in the form of a lecture. The aim is to do this in such a way as to keep the minds of the pupils moving from point to related point with sufficient rate to sustain the interest and hold the attention, and with sufficient force to fix the thought. The teacher thinks and presents; the pupils listen and think. They see and understand, follow the line of thought closely, and assent to or dissent from the conclusions.

This method is often supplemented with notes and outlines given by the teacher or taken at random by the pupils. The students are expected to review the lesson from these notes, and sometimes to reproduce the substance of it in oral or written form.

1. Advantage of this Method to the Teacher.

- (a) *It enables the teacher to teach a large class.*
- (b) *It makes the teacher clear, strong, and logical in thought and expression.*
- (c) *It tends to add greatly to the learning of the teacher.*

University professors who use this method often become leaders in thought and scholastic attainment.

2. Advantage to Pupil.

(a) *It instructs the child.* We are told that "Telling is not teaching." This is true only when the information imparted falls upon a passive mind. Telling is not the best kind of teaching, yet, nevertheless, it may be regarded as teaching,—a form of presentation when the information is received by an active mind. When fuel falls upon extinct fires it produces no heat; not so, however, if there is sufficient fire to ignite it. So telling is teaching when it stimulates thought,—that is, when the inner activities respond to the external presentation.

(b) *This method helps to make the pupil who follows the teacher closely, assenting to or dissenting from his conclusion, clear, strong, and logical in thought.*

3. Disadvantages to the Teacher.

(a) *It gives little skill in the work of presentation aside from the ability to lecture.*

(b) *It seldom develops a teacher strong in class management.*

(c) *It fails to reveal to the teacher the pupil's grasp of the subject.* It gives him no opportunity to measure and weigh his ability. As a means, therefore, of testing his preparation, knowledge, power, or skill it is the poorest of all methods.

(d) *It gives to the teacher less knowledge of practical pedagogy and child study, possibly, than any other method.* This knowledge ordinarily comes to the teacher as he observes the inner response which the pupil makes to external presentation. This method, as already noted, may fail to arouse mental action, but when it does stimulate thought it affords the teacher little opportunity to

watch the movement of that thought and to measure and to weigh it. The thought of an individual is best measured by what he says and by what he does, and, as this method requires neither action nor speech on the part of the learner, it reveals almost nothing of his acts and habits of thought. Mental action is possible without speech; yet language is the great medium through which it manifests itself. This method thus reduces the art of teaching to a mere process for imparting knowledge.

4. Disadvantages to the Pupil.

(a) *It puts the pupil into a passive, receptive condition rather than an active, constructive attitude of mind.*

(b) *It tends to suppress the natural impulses of the child to speak and act.* This helps to defeat the whole purpose of the method by inducing mental inactivity. The fire that is not permitted to burn goes out, and the child that is not permitted to speak or act and thus give external evidence of his mental activity is likely to turn it aside to some more inviting field.

(c) *It does not test preparation and therefore may not encourage it.*

(d) *It tends to suppress the natural interest of the child, and as a result often fails to hold his attention.* To take no part in a recitation beyond that of listening to a lecture on the subject by the teacher is likely to quench, rather than fan, the fires of interest. The child who feels that he has nothing to do but listen, will, in all probability, soon regard that as unnecessary, and thus allow his mind to wander at pleasure; but active participation in the work arouses and sustains his interest and helps to fix his attention.

(e) *The lecture method is weak in its opportunities for practice, through which skill and power are acquired.*

Knowledge, skill, and power are the objective points of every recitation. The first is the result of study or instruction; the second comes from drill; the third is developed by a vigorous exercise of the various powers of the mind and by the application of known principles to concrete cases.

It is evident that this is an excellent method of imparting knowledge. But when divorced from other methods, it affords little opportunity for the drill that gives skill, and for the training that results in power. It may give the child knowledge, but not the ability to use and apply it.

This method as such has no place in the public school. It belongs to the university, where the teacher is in possession of fresh knowledge on the subject not yet in print, or where the subject matter of the lesson has been gathered from sources too vast and varied for the student's research, or that lie beyond his reach. It may be used to advantage in the college, but in every case its use should be limited to advanced students who are impelled by an intense purpose to know and understand what is presented, and who have some power to verify and apply it.

But while this method is not to be used in the elementary school, the teacher is not to infer that it is wrong to impart knowledge by direct instruction. On the contrary, it is his duty to tell the class many things, but not the things that lie on or beneath the surface of the text. These should reveal themselves to the student in his study, or in the teaching part of the recitation, where the child is so directed in his investigations that he is rewarded with the joy of discovery. But it is always in order for the teacher to throw additional light on the

subject, especially such light as is needed by the child for a full comprehension of the subject, and yet is not of sufficient importance in itself to repay him for the time spent in the individual research needed in gathering it for himself.

The lecture method holds a most important place in the education of the masses outside the university and the college. It is the one employed by the pulpit and the platform. This is necessary, first, because no other method lends itself so readily to the instruction of large assemblies, and, second, because the subject matter of the lesson is not to be found in convenient form for the perusal of the people. But wherever used it must always fail with the individual unless it sustains his interest and holds his attention.

Pulpit and
Platform
Employ the
Lecture
Method.

II.—THE QUESTION METHOD.

In this method the teacher asks questions about the subject matter and the pupils answer them. The teacher endeavors by skilful, orderly, systematic questions to present the salient features and the lesson facts of a subject clearly and logically and to have the pupils examine, discover, and understand them. These questions rivet the attention of the learner upon the facts and points and relations to be known. If the child, guided by these questions, is not led to discover and understand that which the teacher would have him know, the teacher is expected by direct statement, suggestion, and illustration to throw such light upon it as will render it luminous. In a word, the child discovers and understands new facts, sees new relations, and reaches new conclusions, and thus masters a subject by reason of the investigations he

makes, guided by the questions and suggestions of a skilful teacher.

The questions may be so framed and directed as to develop the subject in a systematic and logical manner. Each question grows out of the knowledge previously mastered in such a way that, as the pupil masters the underlying principles, notes the current of causes and the tendency toward effects, his mind is forced by the logic of known conditions to discover the next step in the development of the subject. Guided by these questions, under the light of these conditions, the learner's mind, in its investigations, sweeps every part of the lesson field, and of necessity must discover the next logical link in the lesson chain. The mind of the child moves forward in its voyage of discovery, guided by these questions and illumined by the light of his own thought and by that of existing conditions.

This phase of the question method is sometimes called the development method. It is to be noted that this development refers only to thought, not to subject matter. You cannot draw out from the mind facts not in it, but you can make it think logically about the facts in its possession. If the pupil has not made definite preparation, and the teacher's questions are vague and
Guessing
Contests. general, this development is likely to degenerate into a mere guessing contest. But pointed questions guide the mind as it reviews in thought what it knows.

In class instruction the question has a variety of uses.

1. *It may call for the contents of the child's memory.* Such questions are needed to test knowledge, but they are the very lowest grade of pedagogical questions.

2. *Others may be used to awaken interest.* These are important in that they prepare the mind for what is to

follow. They raise it to the white heat of expectancy, the most opportune condition when presentation will do its greatest work. They get the mental camera ready, as it were, for the flash-light of presentation.

3. *Others direct the mind in its investigations.* The child has some related facts that will help him to grasp and interpret the thing he is trying to know. The question directs him to those known facts, calls them up into consciousness, and helps to hold the known side by side with the unknown. It thus guides the mind in the process by which the unknown becomes the known. In a word, these questions stimulate thought.

Kinds of
Questions.

The first of these classes of questions may be called *testing* questions. They call for what the child has, and the mental repetition occasioned by them helps to deepen impression and thus to fix knowledge more firmly in the mind. They call for the *contents* of the mind, however, rather than for its *exercise*, and train the child to *give* rather than to *get*.

The questions included in the second and third divisions serve a different purpose. They arouse the mind and get it ready to see, to grasp and to know. They direct its investigations and lead it to discover and to understand the thing hitherto unknown, and make it a part of the mind's equipment for future service. The purpose of these questions is to get the mind to examine and comprehend the unknown rather than to relate the known. They may be called *thought* questions. They demand a special product that must be produced by the processes of thought before it can be delivered. They train the pupil to *get* through these processes what he *would give*. They stimulate the thought that discovers new relations

and reaches new conclusions, and that grasps, interprets, and assimilates the thing hitherto unknown.

In the use of the question method, then, great care must be exercised lest *testing questions* only are employed, thus allowing the recitation to degenerate into a mere examination. The questions must do more than search the mind in quest of superficial information. They must *arouse* and *direct the thought* of the child. They must demand a product, not of the *memory alone*, but also of *the mind*, one that the processes of thought must either *discover or make* before it can be *delivered*. Any method that tests preparation simply by asking for the contents of the mind, rather than for the exercise of it, is the method of a novice. It is only a part, and the least important part, of a legitimate method. For nothing in the school, or out of it, in any method can ever take the place of thought.

1. Advantages of this Method to the Teacher.

(a) *It enables him to test preparation, knowledge, power, and skill, and thus encourage study.*

(b) *It makes the teacher skilful in method and management.*

(c) *It reveals the contents and limitations of the child's mind, the quality of its fibre, and the habits of its thought, thus giving to the teacher the knowledge needed in order to instruct the child. He discovers not only what to teach and illustrate, but also the level of the child's capabilities at which the work will give the largest returns.*

(d) *It affords ample opportunity for direct instruction, and for a systematic development of the subject.*

(e) *It lends itself with equal facility to every part of the recitation. It is the main instrument in the test or examination, and in the drill; it also reveals just what*

should be taught, and actually calls up the similar known facts by which the unknown is to be understood and interpreted.

2. Advantages of this Method to the Pupil.

(a) *It tends to sustain the interest and hold the attention* by keeping slow minds moving and sleepy minds awake.

(b) *It affords ample opportunity to apply rules and principles* in the development of power and in the acquisition of skill.

(c) *It demands individual thought and expression.*

(d) *It trains in the art of study*, not only by testing preparation and demanding thoroughness, but also by the manner in which the investigations are directed.

(e) *If the teacher is logical and analytic in thought, it tends to develop similar power in the child.*

This method is well adapted to the work of the elementary school. It surpasses every other method in opportunity to test preparation, knowledge, power, and skill, to demand thoroughness, and to arouse and direct thought.

As a general rule, the teacher should avoid the questions so often printed in the book, not because they are not good, but because he can, and generally does, use them without putting his own thought into them. This degrades both the teacher and his art, the one into a machine, the other into a mechanical process. Such questions are said to be like the bird-tracks made in the mud of former ages, now hardened into flinty rock. They show where a living creature once stood, though they, themselves, are lifeless and formal.

Lifeless and
Formal
Questions.

These printed questions are very helpful to the child in trying to master a subject, but too often they rob the

teacher of his vitalizing power and the teaching process of much of its skill. Thought calls for thought. The thinking teacher makes thinking pupils. And the teacher who, with a *definite purpose* in mind, thoughtfully frames the best question he can, even though it is not the best that could be asked, does himself more good, and the pupil, too, than the one who mechanically repeats the questions framed by the author. Pupils should drink from "a running stream, not a stagnant pool," as Arnold remarked, and they should dip up the life-giving water not with a rusty tin made when the book was printed, but with a bright new cup made for the occasion. A question hot with the burning thought of an active mind is generally more effective than one coined in the author's mould and left embalmed in lifeless form upon the printed page.

There are three occasions, however, when a teacher may use these printed questions. First, when he can do no better; second, when he thinks into the subject and through it as the author does, and thus makes the questions the vehicles for his own thought; and third, when the author sums up the essential points of a subject in logical order in a systematic review. But even then they should be warmed with the fresh thought of an active mind.

But there are some phases of this question method that teachers should note in order to avoid. Many questions may be asked that are irrelevant and therefore out of place. Others call for unimportant details, and still others may be poorly phrased and out of their logical order. Indeed, some teachers become so expert in the use of this method that they can question a class at great length upon a subject of which they have little knowl-

edge themselves. Their questions are blind and unrelated. They have their pupils browse around in the field of the non-essential, picking up a stray, isolated fact here and there, without leading them to the vital issues that are to be grasped and understood. It is not the number of questions asked, but the character of them that marks the teacher's skill and power. Ordinarily much time is wasted by idle, irrelevant, empty questions.

Blind
Questions.

III.—THE SOCRATIC METHOD.

This is sometimes called the question method. It resembles the developing part of this method, and yet it may be well to examine it individually.

It takes its name from Socrates, who originated and used it as he taught in the streets and marts of Athens. He was not attractive in appearance, "with his thick lips, snub nose, corpulent body, and personal ugliness;" yet he is one of the most attractive characters in all history, and is remembered as the founder of this method and as the most famous and fascinating teacher of antiquity.

Socrates, as Dr. Brumbaugh suggests, assumed (1) that the child was ignorant, (2) that truth is implicit in every soul, and (3) that the question was the means of self-revelation, *i. e.*, the means of making conscious what was unconscious in the soul.

He was the first teacher to organize the art of questioning. He placed it upon a scientific basis. He aimed to give training to the mind by thinking, to increase its power to examine, to discover, and to verify, rather than to enlarge its store of knowledge by exposition.

This method avoids direct statement of fact on the part of the teacher, and strives by questions to lead the

pupil to express an opinion on the subject under discussion. The teacher detects the truth or falsity of that opinion, but does not state it. By a series of questions the pupil is led to examine this opinion, to bring to bear upon it all the force of fact and reason at his command in an effort to discover whether it is true or false. This process continues until the learner discovers the absurdity or the validity of the statement, and is led to reaffirm or revise it as his conclusion demands.

It is well to note that statement is not always fact, that conclusions are not always correct, and that opinions are not always sound. Plato defined opinion
 Plato's Definition of Opinion. "as something more dusky than knowledge and more luminous than ignorance." This method rejects statement until it is verified, and conclusion until it is weighed in the sound balances of logic and thought. It causes opinion to emerge from the dusky shadows, to step out from the haze and the mist into the full light of reason and judgment, and to take its place on the side of truth or on the side of error as its merits demand.

1. Perhaps a clearer notion of this method may be given by stating formally its fundamental characteristics:

(a) *It avoids direct instruction.*

(b) *It leads the learner to make a statement about the subject under consideration, or it takes a statement already made or an opinion held by another.*

(c) *It requires that the teacher shall DETECT the soundness or the absurdity of the statement or the opinion, but not ASSERT it.*

(d) *It causes the learner to examine that statement, to weigh that opinion, to test them by all the power of fact and reason at his command, and thereby discover their truth or their falsity.*

(e) *It concludes by leading the pupil to revise or reaffirm the statement, to reject or accept the opinion.*

The purpose of this method is not to impart knowledge, but to help the learner to see more clearly with what he has; to reveal latent truth through a better use of his mental equipment; to arouse it and bring it up into consciousness; and in the light of reason and judgment to require him to verify and confirm and finally to revise, reaffirm, or to annul his previously conceived opinions. This method assumes that it is better for the student to survey the field, examine the facts, and reach conclusions than to try to force them upon him. It would draw out rather than pour in.

The process of this method is pre-eminently a process of thought. Its steps are examination, investigation, comparison, and conclusion. Thought, as generally analyzed, includes three stages or processes,—conception, judgment, and reasoning. And it is observed that while this method does not entirely avoid the first it employs mainly the second and third.

The instrument of the Socratic method is the question. All kinds of questions may be used that will aid in reaching the desired end, but two classes are important. First, those that convince of error, and second, those that reveal truth more clearly. The learner must be made to see the magnitude of his error and the extent of his folly by bringing him face to face with the consequences of his absurd, illogical, and contradictory opinions. To convince him of his error is the first step toward a revision of his opinion. Until he sees his absurd opinion as others see it, he is usually unwilling to discard or revise it.

But to shatter the foundations of absurd opinion is

not in itself sufficient. For absence of opinion in education is not the aim of true teaching. The questions that convince of error only clear the way for those that are to lay the foundations and build up sound judgments that give clearness, content, and limitations to ideas that are struggling for birth in the mind of the child. These help to make vague truth definite, misty notions clear, and to bring out into the open sunlight of mind that which before flitted in the maze and shadow of mental indistinctness. In all phases of interrogatory method there are different kinds of questions, but in the Socratic method the questions that convince of error, and that arouse latent truth, and bring to light half-hidden ideas are by far the most important.

Making
vague Notions
Definite.

2. Advantages of the Socratic Method to the Teacher.

(a) *It gives him keen insight and sound judgment in discriminating between truth and error.*

(b) *It makes him clear and strong in discussion.* With the resources and skill of a dialectician, he stands firmly entrenched behind the ramparts of fact, logic, and argument.

(c) *It develops the habit of selecting and following a controlling aim,* so often absent from the question method. He sees the end from the beginning and unifies and intensifies all his efforts in the attempt to reach it. It helps to develop the executive power of the mind as it strives to organize and direct the resources at its command toward a definite end.

3. Advantages of this Method to the Pupil.

(a) *It gives rapid mental development and great mental*

power, making the learner clear, strong, and logical in thought.

(b) *It gives judicial mental poise as the result of a careful examination of all the facts.*

(c) *It gives positive convictions not easily set aside* that tend to make the mind independent in thought, because this method puts the burden of observation, examination, and conclusion upon the learner.

(d) *It gives to the pupil the joy of discovery* and the calm confidence that springs from a consciousness of power.

It is evident that this method cannot be applied to all kinds of school work. As a method of imparting knowledge it is helpless. It gives exercise, not nourishment, to the mind. Its province is to develop mental power with what the child has, not to convey to him additional facts.

It is one of the most difficult of methods. Only a master can use it. Indeed, it is so difficult that its exclusive use is seldom found. But it occupies an important place as a part of other methods in the presentation of certain subjects and the principles upon which they rest, and in exercises designed especially to develop the habit of independent thought.

IV.—THE TOPIC METHOD.

In this method topics are assigned to individual pupils and they are asked to recite. They may respond through the medium of either oral or written expression.

1. Three phases of this method are met in actual practice. The first may be called the *verbal phase*, the second the *thought phase*, and the third the *discussion phase*. In the first the child recites the topic in the exact phraseology of the text; in the second he states the substance

of it in his own words ; while in the third he discusses it, pointing out how other authorities have treated it, noting the different views and opinions, and stating what he thinks of them.

(a) *The verbal phase.* The verbal phase of this method is of little value. It tests superficial preparation somewhat, but it requires mainly an act of the memory. It makes great verbal memories but not strong minds, for in it the mind recalls what it may or may not comprehend. This is the method in use in China. When found alone, divorced from question, suggestion, or illustration, it is the weakest and poorest of all the shams found in the class-room. It is in the little world of the school-keeper, and nowhere else, that it is called teaching. If this verbatim recital of a topic is teaching, then pedagogy is a myth, the science and the art of teaching are dreams, and the normal school a thing unnecessary. Under such conditions no trained teachers are needed, for any individual who can read and hear may listen to a child while he recites words.

This phase of the method was once very prominent in the work in geography, history, physiology, and civics. These subjects are generally presented in the text by topics, and the first attempts of young students to study a lesson are always attempts to memorize it. But progress in the art of study and the art of teaching soon leads the pupil away from such empty efforts and lifts the teacher above such foolish methods.

(b) *The thought phase.* This phase rises in the scale of importance. It is far superior to the first. It calls for an act, not of the memory alone, but of the mind. To state the substance of what has filtered through the

understanding into the mind, not only tests preparation and induces study, but also cultivates the power of sustained thought and expression. This phase may be used to great advantage in the upper grammar grade and in the high school. It lends itself with great facility in topic branches, but not until the learner has acquired some proficiency in the art of study.

(c) *The discussion phase.* This is still more difficult than the others. It exercises the mind in the higher realms of thought and gives a better result than either of the other phases. But it can be used to a limited extent only, below the high school. To discuss a topic not only tests preparation and cultivates the habit of connected thought and expression, but also demands that the pupil shall make some research, that he shall examine, weigh, and verify what he finds, and then reach definite conclusions on the subject. And to do this develops, as it demands, a superior type of ability.

The discussion should be carried on in a broad, dignified, deliberate way in a sincere effort to pass judgment upon all and select the best, and at no time should it be permitted to degenerate into petty disputation.

The topic method is often supplemented by other methods. The class may be questioned about the topic recited, the teacher or some pupil may add by direct statement information not found in the text, and the whole turned into the vortex of class discussion. The lecture, the question, and topic methods are thus united and form a combined method embodying the strong point in each.

2. Advantages of the Topic Method to the Teacher.

(a) *In the verbal and thought phases of this method* little is required of the teacher and little is gained by him. As such it is the most barren of all methods in what it con-

tributes to the teacher's power and skill. Its excessive use tends to develop a lazy, indifferent teacher who "hears the children say their lessons."

(b) *In the discussion phase it gives skill in class management*, and a masterly intellectual grasp of the subject taught, due to the extended research needed to guide the discussion, and to a knowledge of the varied standpoints from which authorities have treated it.

(c) *The thought and discussion phases of this method* reveal to the teacher the pupil's knowledge, power, and skill, and therefore indicate the point at which instruction and drill must be given and the level on which they must be pitched to accomplish their purpose.

(d) *The combination method makes a teacher expert in almost every phase of class work and class management*, develops the power to use reference books and other authorities to advantage, and at the same time gives a broad and comprehensive knowledge of the subject.

3. Advantage of the Topic Method to the Pupil.

(a) *The topic method operating through its verbal phase gives a strong verbal memory.*

(b) *The thought phase of this method not only gives a comprehensive knowledge of the subject, but it also develops continuity of thought and the power of connected expression.* These may be regarded as the great contribution of the topic method.

(c) *The discussion phase exceeds the thought phase of this method in the intellectual grasp of the subject and in the strength of mind and the power of expression it gives.* It is also rich in the contribution it makes to the learner's ability to consult authorities, to weigh their statements, to accept or reject their opinions, to reach individual conclusions, and to set them forth in language that will

both inform and convince. It gives to the student the very best habits and powers of study.

4. **Disadvantages of the Topic Method.** When this method is divorced from all others it has some elements of weakness in it. This is especially true when it avoids the last and operates only through its first and second phases.

(a) *Under such conditions it affords no opportunity for the teacher to instruct.* He simply "hears recitations."

(b) *The recitation may deal only with superficial facts, and may, therefore, waste much time on non-essentials.* Pupils taught by this method, unless they are well advanced in the art of study, are likely to gather and give only the general facts that lie on the surface, and thus overlook the vital issues and the fundamental principles that are beneath. The things worth knowing are often hard to find, and reveal themselves only to the persistent student in his study or through the skill of the instructor in the class-room.

In another part of this treatment of the recitation we have discussed the subject of presentation and pointed out some of its essential characteristics. It is to be noted that this method avoids presentation, because there is no place for actual instruction in it. The term "recite" is used in its literal sense, and the child simply tells what he has learned, either in his own words or in those of the text. The method has its merits, but its disadvantages indicate the lack of wisdom in using it to the exclusion of all others.

The Topic
Method avoids
Presentation.

We frequently hear of other methods, but they are not of sufficient importance to require separate treatment. Indeed, they are only parts or phases of the individual

methods already discussed. The so-called direct method is only a part of the lecture method. The discussion method is, as has been seen, only a phase of the topic method. Then we read also of the oral, the written, the concert, the consecutive, and the promiscuous methods. These are not methods in themselves,—they refer only to the language form of methods and to the manner in which pupils are asked and permitted to take part.

V.—SUMMARY.

In concluding this discussion of individual methods it may be well to sum up by designating in a general way the place and use of each method. In doing this, we must bear in mind that these methods may be analytic or synthetic, inductive or deductive, objective or subjective, or empirical or rational.

1. The lecture method belongs to the university and the college. It has no place in the elementary and secondary school, *except incidentally to impart instruction*, and thus supplement the work of other methods.

2. In the work of the elementary grades the question method is one of the most appropriate, but its process, as a rule, should be inductive, objective, empirical, and both analytic and synthetic.

3. In the grammar grades and the high school the topic method may be used to great advantage in giving *continuity to thought and cogency to expression*. But it should operate through its *thought* and *discussion* phases; and, in order that the teacher should have an opportunity to instruct and to point out vital principles, it should be supplemented by the *lecture* and the *question* methods. The process in these grades should be more analytic, deductive, subjective, and rational than with younger pupils.

The verbal phase of the topic method which requires the mere verbal repetition of paragraphs should have no place in any school, except as a process for training verbal memory.

4. If the teacher is skilful enough to use them, the Socratic method and the discussion phase of the topic method may be used to great advantage in the higher grammar grades and the high school.

TOPICAL OUTLINE

METHODS

I.—LECTURE METHOD.

1. Advantages to the teacher.
 - (a) Enables him to teach a large class.
 - (b) Makes him clear, strong, and logical in thought and expression.
 - (c) Tends to make him scholarly.
2. Advantages to the pupil.
 - (a) It instructs him.
 - (b) It helps to make him clear and strong in thought.
3. Disadvantages to the teacher.
 - (a) Gives little skill aside from the ability to lecture.
 - (b) Gives little skill in class management.
 - (c) Fails to reveal the pupil's grasp of the subject.
 - (d) Gives little knowledge of pedagogy and child study.
4. Disadvantages to the pupil.
 - (a) Renders his mind passive and receptive rather than active.
 - (b) Suppresses natural impulse to speak and act.
 - (c) Fails to test and encourage preparation.
 - (d) Suppresses natural interest.
 - (e) Gives no opportunity for drill.

II.—QUESTION METHOD.

1. Advantages to the teacher.
 - (a) Enables him to test preparation.
 - (b) Makes him skilful in method and management.
 - (c) Affords him ample opportunity to instruct.
 - (d) May be used in every part of the recitation.
 - (e) Reveals the contents and limitations of the child's mind.
2. Advantages to the pupil.
 - (a) Sustains interest and holds attention.
 - (b) Gives ample opportunity for drill.
 - (c) Demands individual thought.
 - (d) Trains in the art of study.
 - (e) Develops analytic power.

III.—SOCRATIC METHOD.

1. Formal statement.
 - (a) It avoids direct instruction.
 - (b) It leads the child to make a statement or to express an opinion.
 - (c) It demands that the teacher shall detect but not express the truth or error of the statement.
 - (d) It leads the learner to test or verify the opinion.
 - (e) It concludes by having him reaffirm or revise his statement or opinion.
2. Advantages to teacher.
 - (a) It gives insight and judgment in detecting truth or error.
 - (b) It makes him clear and strong in argument.
 - (c) It develops the habit of selecting and following a controlling aim.
3. Advantages to pupil.
 - (a) It develops a mind strong and logical in thought.
 - (b) It gives the pupil judicial mental poise.
 - (c) It gives him positive convictions.
 - (d) It gives him the joy of discovery and the confidence that comes from tested strength.

IV.—TOPIC METHOD.

1. Phases of this method.
 - (a) Verbal phase.
 - (b) Thought phase.
 - (c) Discussion phase.
2. Advantages to the teacher.
 - (a) Verbal phase makes him indifferent and lazy.
 - (b) The discussion phase gives skill in management and a great intellectual grasp of subject.
 - (c) The thought and discussion phases reveal the pupil's needs and capacity.
 - (d) The combination method gives skill in class instruction and class management.
3. Advantages to the pupil.
 - (a) Verbal phase gives verbal memory.
 - (b) Thought phase gives continuity of thought and expression.
 - (c) Discussion phase gives masterly grasp of the subject and ability to study.
4. Disadvantages of the topic method.
 - (a) It affords no opportunity to instruct.
 - (b) It may deal only with the superficial facts.

V.—SUMMARY.

1. Place and use of lecture method.
2. Place, use, and process of question method.
3. Place, use, process, and phases of topic method.
4. Place and use of Socratic method.

PART III

CHAPTER III

ORAL AND WRITTEN WORK IN THE RECITATION

What an eye-opener a searching written examination would be in schools where teachers talk and explain much, and the pupils recite very little, where the instruction is given largely in the form of running talks without a halt to test results !

EMERSON E. WHITE

CHAPTER III

ORAL AND WRITTEN WORK IN THE RECITATION

The living word is the most powerful agent of instruction.—
ROSENKRANZ.

WE have examined individual methods in an effort to ascertain their contents and limitations, the strength and weakness of each, and the fundamental processes through which they operate. We are now to study the value of oral and written work and ascertain, if possible, the place and the merits of each.

All language is either spoken or written. And it is evident that every method used in the recitation employs one or both of these forms of expression. Some use the oral, others the written, and frequently one may use both.

The lecture method in imparting knowledge ordinarily uses the medium of spoken language, yet it often demands of the student a written statement of the substance of the lesson. The question and the Socratic methods generally operate through oral expression, but they, too, may employ written language to reproduce what was taught, while the topic method employs both forms with equal facility.

I.—THE ORAL PHASE OF RECITATION WORK.

In the primary grades the language employed in the recitation must be largely oral. This is necessarily true until the child can read script and write with sufficient

facility to take part in a written recitation. He must be taught to know through the eye what he knows through the ear, and to express with the hand what he can express with the tongue before written work can be used to any extent in the class-room.

But not only in the primary, but in every grade of the elementary school, the oral recitation is the greatest medium for instruction at the teacher's command. Its advantages over the written may be designated as follows:

(a) It is the most natural and convenient instrument of instruction. The written method may be used to examine and train, but as a medium for practical instruction it is very inconvenient and cumbersome. It is pre-eminently a method for testing and training, but not for teaching, while oral methods afford the most ample and convenient opportunities to instruct.

(b) The oral recitation surpasses all others in its power to arouse the interest and sustain the attention of the pupils. The oral question or suggestion is a challenge to wavering attention. Either may be so directed to the listless pupil as to stir his interest and demand his attention.

(c) The oral recitation is the great medium through which the personality of the teacher makes itself potent. Personality is a mighty and mysterious power by which one man is distinguished from another. It is the individuality of a soul externalizing and impressing itself upon others. The avenues through which

The Power of
Personality in
Oral Work.

a great soul influences others are the eye, the voice, the appearance, and the manner of the individual. Each is important; but since the power of language is always reinforced by the glance of

the eye and the attitude and action of the individual, the voice is one of the greatest channels through which the currents of a teacher's influence, from the reservoirs of power within, sweep outward to impress children. No other method offers personality such a favorable opportunity.

Few teachers know the real value of oral work in the elementary school. This is particularly true in the department of language. The child will speak a thousand words for every one he will write; his language in life will be almost exclusively oral, and yet we ask him to write, write, write, instead of training him to speak.

The relative value of oral and written lessons in language has never been clearly determined, and many teachers seem to think they are not teaching the subject unless the child is writing something. Thus, much of the oral work that is needed to prepare him for written language is neglected, and his instruction in this department is built upon a flimsy foundation.

What is true of language is true also of elementary arithmetic. The oral drill intended to give the child skill is greatly neglected. Many teachers give no oral work in class. They fail to see that much of the time, possibly three-fourths of it, spent in written class work in elementary arithmetic, is devoted to the mechanical rather than to the mathematical part of the work. Mathematical skill is the result of mental, not of mechanical, exercises. And the twenty-minute period given to written class work in elementary arithmetic may not keep the child's mind engaged mathematically more than one-fourth of that time. Some written work, indeed much of it, is neces-

Oral Drill
Greatly
Neglected.

sary in giving the power to apply the fundamental operations to the solution of problems, but in giving skill—that is, the ability to calculate accurately and rapidly—the oral drill far surpasses the written exercise, because so much more can be accomplished by it in the same period of time.

II.—WRITTEN WORK.

But, notwithstanding the importance of oral instruction, there is a prominent place in every school for written work. The field is limited in the primary, but it is somewhat enlarged in the grammar grade, and greatly enlarged in the high school. In every grade above the lowest primary there is some work of such a character that it demands written expression. Some things must be reduced to writing on board or paper for the critical examination and inspection of pupils and teacher. Written tests, reviews, and re-statements are very helpful and valuable in measuring the efficiency, not only of the child's knowledge, power, and skill, but also of the oral methods by which he was taught. To be able to write clearly and accurately the substance of what was presented by the teacher is the best evidence of the efficiency of his efforts.

1. **Kinds of Written Work.** Written work in the school may be considered under three heads:

- (a) Ordinary written work.
- (b) Special written work.
- (c) Written class work.

(a) **Ordinary Written Work.** This is the written work done in the seat in the preparation of the lesson. It is self-imposed by the pupil as an aid in study, and is not to be examined or inspected by the teacher. Its

whole aim is to prepare the pupil for the recitation which in its own way tests preparation.

In advanced classes written preparation is very desirable. The fact that the mind seeks the aid of the pencil in its attempt to master a lesson is indicative of that intense desire to know and understand which lies at the base of all true study. Because of this, written preparation imposed by the teacher is often less valuable than that which is voluntary.

Since this work is not to be marked by the teacher the full measure of its value lies in the contributions it makes to the child in the act of preparation. These contributions are chiefly concentration of mind, clearness and fulness of comprehension, and exactness in expression. And as this work is generally self-imposed it tends also to give self-reliance and self-control.

But however valuable this work is in the advanced grades, there are some forms of it in the primary schools that waste much time and give very little in return that is of educative value. One of these is found in the senseless habit imposed by some teachers which requires the child to copy a reading lesson on slate or paper in the vague hope that it will prepare him to read it. This plan is in general practice in some localities. It requires much time and patient effort on the part of the child, and yet beyond what it contributes to habits of industry has little to recommend it.

Copying a
Reading
Lesson is of
Little Value.

Writing a lesson does very little toward preparing the child to read it. By actual test second-grade pupils were found to be able to copy accurately a dozen difficult lines from "Paradise Lost," and after three reproductions of them in writing could neither read them nor spell

the important words. A similar test showed that they could copy sentences composed of difficult words taken from the dictionary, and yet after three reproductions could not read or punctuate the sentences or spell the words.

A test made with a paragraph from another reader of corresponding grade showed that little children may copy what they ought to be able to read without the slightest mental effort to read or to try to know what they had written. Mere copying may be a mechanical process that does not require the child to exercise his mind in thought upon the thing copied. It may be a thing of the hand only and not of the mind.

Silent reading is getting thought through printed symbols ; oral reading is giving expression to it by the voice ; and it is a delusion to think that the mechanical copying of the lesson is of any value to the child in either of these processes. Persons who copy deeds, bonds, and other written instruments seldom know the substance of what they have reproduced. Their entire mental effort is directed toward making an exact copy. So the mind of the child in writing a paragraph from the text may be directed toward exact reproduction and not toward thought-getting.

Again, some teachers think that copying the text trains the child to spell the words and to capitalize and punctuate the paragraphs. This, too, is a mistake. The purpose the mind has in view in any effort it makes determines the value of that effort. If the child copies some work in an effort to learn how to spell the words and to punctuate and capitalize the paragraph, some good will come from it. But the teacher cannot keep this

Copyists know
Little of the
Substance of
what they
Write.

purpose before a class in copying a reading lesson. He may ask them to do the work with this end in view, but that will not keep it present. Regardless of instructions the controlling aim at least in small children must degenerate into a mere mechanical reproduction.

Proof-readers can spell, capitalize, and punctuate because that is the controlling purpose of their work. But copyists, who are charged with making an exact copy, seldom have any power to correct typographical errors.

Why Proof-readers can Spell.

A child is taught to capitalize and punctuate first by giving him a knowledge of the use of marks and letters and then requiring him to apply that knowledge to concrete examples. Inspection directed by the teacher is also valuable, but mere copying gives little return. In learning to punctuate, the hand does what the mind suggests. In copying the hand reproduces what the eye sees, and there can be no assurance that the mind dwells in thought upon the work. If the mind in transcribing a paragraph is practically inactive in thought and suggests nothing, the work is carried on as a mere mechanical process. Such exercises are valuable in keeping the child employed, but they are almost valueless in what they contribute to mental growth.

There is another form of written preparation that deserves some attention. In some schools children are required to write spelling lessons and lists of misspelled words in the hope that such repetition will train them to spell. It may or it may not. Repetition is certainly an element of strength in teaching, and in another chapter we have discussed its merits and pointed out as far as possible the principles that determine the number of

It is the Mind, not the Hand, that learns to Spell.

repetitions necessary. But it is mental rather than physical repetitions that are valuable in learning to spell. It is the mind, not the hand, that is the principal agent in the effort to learn. If the mind dwells upon the spelling of the word, the effort is valuable ; if not, it is lost.

To copy a list of words is certainly not conclusive evidence that the mind has consciously examined and studied each. And it is the conscious not the mechanical effort that trains it. If the mind notices carefully the spelling of a word, it will not be necessary to write it often, and if the writing is unconscious and mechanical, the repetition is of little value. In either case the work is largely a waste of time and energy. And you may occasionally find a word written correctly four or five times and then an error appears that is repeated as often as it is written.

In copying either a reading or a spelling lesson the mind of the little child seldom examines a word as a whole. This is especially true with reference to long words. The eye catches a group of letters, not necessarily a syllable, and the hand reproduces it ; another group is seen and reproduced. Thus the work proceeds

Copying is often only the Mechanical Reproduction of unrelated Parts.	by adding detached, fragmentary, and unrelated parts. And since the mind seldom notices the word as a whole or by syllables, or dwells upon the idea it represents, the exercise may be of little value either in training the child to spell or to get thought from the printed page. Indeed, the whole process of copying in the elementary school should be regarded more as a mechanical than a mental effort. It is devoid generally of all purpose and conscious effort beyond mere reproduction and is therefore generally devoid of value.
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(b) **Special Written Work.** This work is prepared for some specific purpose and is to be submitted to the teacher for examination and inspection.

It has a legitimate field in the grammar grade and the high school, but it must be used with judgment and moderation. If the child can copy the work, it is almost useless; but if it requires originality of thought and expression, it is both desirable and valuable.

This work is done either in or out of school, but not in class. It may include the analysis of sentences, the parsing of words, the making of outlines not found in the book, the writing of topics, the drawing of maps, and, if the work is so guarded that no help may be gotten, it may also include problems in arithmetic and algebra and work in geometry. It includes also the writing of compositions and the reviews of subjects previously studied. This may be done out of school. But to lift composition above compilation, and to make a written review most valuable in thought and expression, the work should be done in the school-room under the eye of the teacher.

This work is all to be examined. That was part of the purpose in preparing it. It has a double value to the child; that derived from its preparation, and that which springs from its correction. At the same time it reveals to the teacher the knowledge, power, and skill of the child and thus enables him to give the exact instruction needed and to grade it to the level where it will do the most good.

1. When and how to mark this work is a problem as difficult as perplexing. It must not only be marked, but to accomplish the full measure of its purpose the child must be brought face to face with his errors. This may be done by taking a period for discussing them. In

reading the papers some teachers keep a scratch-book, marking in it the errors of individual pupils. This scratch-book furnishes the points for that discussion and enables the teacher to bring the correction of an error home to the pupil who made it.

The Value of a
Scratch-book in
correcting
Errors.

If conditions require it, two or even more periods for discussing errors should be taken. For to omit this part of the work is to fail to teach just what the class needs, and this failure tends to rob the written exercise of much of its value. Reading the papers simply reveals the errors, but the period for discussion and instruction aims to remove the tendency to make them. If this is not done the same error may appear in a pupil's work month after month. But "Error, assailed, reels and staggers like a drunken man," and, after numerous assaults, will reel out of sight and appear no more.

This special written work includes also the monthly, quarterly, and final examinations. In conducting these it is an excellent plan to prepare the questions on separate slips suitably numbered. Each pupil is given a slip with one question on it. When he has answered it he brings his answer to the teacher at the desk and receives another slip. The teacher gives him credit for his answer, and thus the work proceeds. This plan has two advantages. It allows the teacher to read and mark the work during the examination and thus saves many an hour outside of school. At the same time it guards against the opportunities to "borrow information" by having the pupils in adjacent seats answer different questions at the same time. For the correction of errors found in this work use the scratch-book and the subsequent period for the special instruction, or call each

pupil to the desk as the examination proceeds and show them the error in the work just handed in.

2. There is another plan for correcting compositions and all phases of written work that is very helpful to the pupils. This plan uses a system of symbols known to every pupil. They stand for errors in fact, in syntax, in punctuation, in orthography, in capitalization. The system includes some mark that will indicate all the kinds of errors made in ordinary composition. In reading the papers the teacher simply runs the pencil through the error or underscores it, and marks on the margin opposite the symbol that indicates the class to which the error belongs. The papers are then handed back to the pupils for their inspection. They discover the mistakes, correct what they can of them, and rewrite either the whole paper or the sentences in which the errors are found. The teacher examines the corrections made by the pupil and notes in the book of errors all such points as are necessary to be taught over again at some future time.

The Use of a
System of
Symbols in
marking
Papers.

This method requires more time and care than many teachers are willing to give to this work, but it is the shortest route to accuracy on the part of the child. This plan has some advantages.

(a) It puts the responsibility of discovering the errors upon the child. The symbol indicates where the error is to be found and the class to which it belongs, but the pupil must discover it.

(b) It puts the burden of correction upon the child. He must consult the dictionary, the grammar, or the text for the knowledge that will aid him in making the corrections.

(c) It develops the power of critical examination and judgment and the power of self-help.

(d) It brings the child face to face with his own weakness and lifts him above it by leading him to strengthen his powers at their weakest points.

(c) **Written Work in the Recitation.** This form of written work includes every kind done in the class under the direction of a teacher. Its purpose is to have the pupils recite, partially at least, through the medium of written language in such a way as will be most helpful to them.

Ordinarily it is a reproduction of the substance of what the child has studied in the preparation of the lesson under consideration or in the reproduction of something formerly studied. It also embraces written words, sentences, problems which reveal the child's ability in spelling, language, and mathematics. It may include lessons in writing, drawing, map-drawing, diagramming, outlining,—in short, any kind of class work intended to appeal to the eye of the teacher and the pupils.

This form of written work may employ either paper or blackboard, and is generally used in teaching mathematics, language, spelling, and composition. It may be used with equal facility in teaching geography, history, civics, and physiology by the topic method, or in reproducing the substance of what was taught by any method.

This work is only a means to an end, and to attain that end it must be inspected and discussed. Without critical inspection it will scarcely call forth the interest of the child or be pitched on the highest plane of his best effort.

If the work is on the blackboard the whole class may inspect it critically under the direction of the teacher, making the pupils, as far as possible, responsible for the

corrections. In explaining problems, demonstrating theorems, analyzing sentences, or reading any kind of written work, the aim is to have all the pupils follow in thought, assenting to, or dissenting from, conclusions.

This is a phase of presentation in which one pupil teaches others, and as such it should be clear, strong, logical, and to the point. And

The
Explanation is
a Phase of
Presentation.

like all presentation, it fails in its purpose if it does not stimulate and direct the thought of those who are expected to learn. The open eye fixed on the work following closely the pointer in the hand of him who explains, and the alert ear catching every word uttered, are the best evidences that the purpose of the presentation is being realized. Pupils may look and listen and yet not follow in thought, but ordinarily the mind is aroused and led through eye and ear.

If the work is on paper, it may be read by the individual who wrote it, the class and the teacher noting such errors as appeal to the ear. Or papers may be exchanged and marked. Even when most pupils use paper, it is wise to have a few write on the blackboard in order to have some work prepared for typical correction and discussion by the class.

2. **Advantages of Written Work.** Written work carefully planned, wisely directed, and critically inspected has some advantages.

(a) It economizes time. Its method is simultaneous, yet individual rather than consecutive. Many may write at once, but only one may speak.

The great defect of the oral recitation in practice is waste of time. Theoretically all are expected to be attentive, and to think with or after the one reciting. But in practice many mark time while one marches on.

(b) Written work gives clearness and cogency to

thought and conciseness, exactness, and coherency to expression. And these qualities give tenacity and accuracy to memory.

The mind sits in judgment upon what is written, and thus logically and forcibly pushes the leading thought forward into the next sentence. "Writing makes an exact man," said Bacon, and when rightly employed it makes the pupil clear and strong in thought, and concise, forceful, and exact in statement.

(c) Written work trains in the art of study. It reveals to the mind what has been mastered. By written work, outlines, diagrams, and examples the mind sees exactly what it knows, and discovers the point at which its energies must be concentrated in order to make the unknown known. Study is the self-directed effort to learn. It implies a knowledge of the point to which the effort must be directed. Written work not only reveals this point, but in the effort to discover the leading thought that is to be projected into the next sentence, it actually trains the mind to know; that is, to study.

Roark summarizes the advantages of a written recitation over the oral as follows:

1. "It gives drill in rapid writing, making the pupil use penmanship only as an instrument.
2. "Writing a recitation accustoms the pupil to spell by eye.
3. "Through a written recitation each pupil may be tested upon the whole lesson.
4. "Writing a recitation affords a training in one of the most valuable forms of expression."

But in many schools there is too much written work. The use of a good thing has been turned into an abuse. The amount of work to be corrected in some schools

makes teaching a sort of slavery, and drains the reservoirs of the teacher's vitality almost to the point of exhaustion.

As a rule, there is too much written work in the primary schools. Three-fourths of the day is often given to it. An ideal system of education would not require much writing from the child during the first two years of his school life. It would devote little time to the preparation of lessons during that period, and spend much of it in oral lessons and drills, followed by brief intervals for rest and play. Without asking him to write much, it would afford ample opportunity for the training of eye and hand.

Too
much Written
Work in the
Elementary
School.

At present we not only ask the child to do what in some respects is unreasonable when viewed from the physiological standpoint, but we keep him doing it the greater part of the school day. He must write copies, problems, words, stories, and lessons as if writing were the only avenue to mental growth.

This is due to some extent to the emphasis that has been placed upon "busy work" in the modern elementary school. The term itself is absurd, as it implies that there are some *idle* kinds of work. Many teachers have come to regard "busy work" as written work. Indeed, the "busy work" papers and manuals have encouraged this by inventing and announcing new kinds of it in the numerous devices which call for some form of written work. The child is thus enslaved in a formal bondage that is not only repulsive, but that actually retards his mental development. It is not surprising, in the light of such conditions, that Dr. Brumbaugh calls "busy work" "the fertile friend of superficiality and the

deadly enemy of all genuinely valuable mental culture." For much of this written work has no educative value, and its preparation is an alarming waste of time, energy, and opportunity.

TOPICAL OUTLINE

ORAL AND WRITTEN WORK IN THE RECITATION

I.—ORAL WORK IN THE RECITATION.

1. As an instrument of instruction.
2. As an instrument to arouse interest and sustain attention.
3. As a medium through which personality speaks.

II.—WRITTEN WORK IN THE RECITATION.

1. Kinds of written work.
 - (a) Ordinary written work.
 - (b) Special written work to be corrected.
 1. The use of the scratch-book in marking and the period for discussing errors.
 2. The use of a system of symbols in designating and correcting errors.
 - (a) This plan puts the responsibility of discovering the exact error upon the pupil.
 - (b) It puts the burden of correcting the error upon the pupil.
 - (c) It develops the power of critical examination and of self-help.
 - (d) It strengthens the pupil at his weakest points.
 - (c) Written class work.
2. Advantages of written work.
 - (a) Saves time.
 - (b) Gives clearness to thought and exactness to expression.
 - (c) It trains in the art of study.
 - (d) Dr. Roark quoted on the advantages of written work.

PART III

CHAPTER IV

PLACE AND TACTICS OF THE RECITATION

He that commands well shall be well obeyed.

WILLIAM OF NEWBURY

By nature some command and some obey, that all may enjoy safety.

ARISTOTLE

Let there be a place for everything, and everything in its place.

J. S. DENMAN

Obedience is discipline's first duty.

LOYOLA

CHAPTER IV

PLACE AND TACTICS OF THE RECITATION

Order and system are nobler things than power.—RUSKIN.

EVERY recitation is either a victory or a defeat in the general campaign the teacher is carrying on against the ignorance or the lack of power in some particular subject. To succeed in the campaign is far more important than to win an individual victory, and yet success is made up of the individual victories just as failure is made up of defeats. And as the wise general sweeps the field with a scrutinizing eye to discover the lines of least resistance and the avenues of easy conquest, so the practical teacher will try to discover and utilize in the classroom the conditions that help to make individual victory easy and final success more certain.

These conditions may be regarded as helpful rather than fundamental. They are not absolutely essential to victory, yet they aid greatly in securing it, and tend to make defeats more infrequent and failure less liable. These conditions may be discussed under the following heads:

1. The place of the recitation.
2. The tactics of the recitation.
3. Methods of calling upon individual pupils.

I.—THE PLACE OF THE RECITATION.

The place of the recitation seems of little importance, and is, therefore, often dismissed without much thought. While it is not vital, it is at least worthy of notice.

In actual practice two plans prevail:

1. The group or class plan.
2. The scattered or seat plan.

The first groups the pupils into a class in some part of the room, usually at the front. This is the plan that is generally used in rural schools. It prevails also in some graded schools.

The second conducts the recitation with the pupils occupying their individual seats, except as each may be called upon to rise and recite. This plan is usually found in graded schools where the divisions are so large that it is difficult to find space for the class in some other part of the room. In some schools the pupils of a class occupy seats on one side of the room, in others they are scattered throughout it. Thus the space occupied by a class during a recitation may be all of the room, or that part of it occupied by a division while at work, or a still smaller section in some part of it.

What, then, shall be the dominating principle that will help the teacher to decide which of these three places shall be selected? We offer the following:

The
dominating
Principle.

The smaller the space occupied by the teacher and the class the greater the influence of the instruction, provided that the space is large enough to guarantee health and comfort to each.

If this principle is true, then the recitation in which the pupils are seated in part of a room is preferable to the one in which they are seated throughout it. And the one that groups them into a small, compact body is preferable to either of the others. It has many advantages.

(a) It is **Favorable to Class Management**. It brings every pupil within the influence of the teacher's eye, and enables him to note the attitude and the actions of each pupil with the least possible effort.

The knowledge that "Thou God seest me" is the greatest restraining moral influence that affects human

conduct. So the eye of the teacher is one of the great restraining influences of the school. Most of the troubles in school arise when the pupils are beyond the range of the teacher's eye. Good police regulations in a city are great restraining influences upon evil-doers. And the controlling and restraining influence of a teacher's eye is like the presence of a vigilant officer to a man bent on mischief. The class grouped into a small area is much easier managed.

The personality of the teacher is the strongest influence in class management. But it is difficult to project personality thirty feet through mid-air to those reciting in the back seats. And personality, like a stream from a hose, is stronger when concentrated at close range than when scattered and spread throughout a room.

(b) It is Favorable to Class Interest and Sympathy, and therefore conducive to Class Attention. Interest and sympathy are like heat. They warm all who are within reach, but they warm most those who are close to the centre from which the radiation comes.

A small stove will warm a dozen persons if they gather around it. But the same number with the same stove will actually suffer from cold if scattered over a large hall. Five pupils will make a class, but they should be grouped into a small area with the teacher. The fires of interest will die out and the warm currents of sympathy freeze if they are scattered throughout a large auditorium. Interest and sympathy are contagious, but only within certain limits. The strength of light decreases as the square of the distance increases. We do not know the exact law that governs interest and sympathy, but we do know that it is similar.

The court takes advantage of this principle by putting

the jury in the jury-box, not only to safeguard the jurors from outside influences, but also that they may be in a close, compact body near the court, the witness, and the lawyers by whom the case is to be presented. And the jury-box plan applied to the pupils in a recitation is always favorable to class interest, sympathy, and attention. A shot at a flock of partridges when they are scattered is not very effective; the same shot may accomplish tenfold as much if the flock is bunched into a small space.

(c) The Group Plan frees the Class from those Seat Objects and Incidents that tend to lead the Mind away from the Point at Issue.

Instruction without attention is impossible. Attention is the closing up of the mind to all things save the one under consideration. When pupils occupy their individual desks during a recitation, books, papers, slates, and pencils should be removed. Nothing should be left in sight that will compete with the lesson for the interest of the pupil, and thus side-track it and switch his attention to something irrelevant. Even when all the objects are removed there are still so many things visible to the pupils scattered here and there over a room that the problem of instruction is rendered difficult because of the distracting influences that dissipate the interest and destroy the attention. The grouping of the class into a small area reduces these distracting and detracting influences to a minimum.

The management, interest, attention, and instruction of the pupils, as well as the personality of the teacher, all demand that class area be made as small as possible, consistent with the health and comfort of the pupils.

There may be some difficulties in the way, but many

of them can be overcome. A large class of small children learning to read may be massed in a straight line or a semicircle, two or three rows deep, and all close to the chart or blackboard to be used.

Good
Management
overcomes
Difficulties.

If the pupils use books or papers in the recitation, the protection of the eye demands that their faces be turned away from the windows so the light will fall on the book from behind. The pupils in a large class in a graded school may be grouped into a compact body in the front seats on one side of a room. Indeed, the conditions that involve difficulties are many, but they yield in most cases to the teacher who recognizes that an important principle which helps to safeguard class instruction is at stake.

II.—TACTICS OF THE RECITATION.

The tactics of the recitation is a system of signals and commands for the movement of pupils to and from class in a quiet, orderly manner, and for the regulation and direction of class work. Pupils are moved and work is directed in every school. The movement of a large number of pupils must be directed as a unit, or confusion, disorder, and waste of time are sure to follow. School regulations of some kind are therefore both desirable and necessary.

The code should be simple, definite, direct, easily understood, yet withal systematic. Such a code has many advantages. It saves time, avoids confusion, promotes order, stimulates interest, imparts vigor, cultivates promptness, encourages obedience, strengthens the power of attention, and helps to lay the foundation of habits of system and order.

Value of a
Code of
Tactics.

Children have a natural impulse toward free, sponta-

neous, and self-directed action. But they have also an impulse toward rhythm in sound and motion, as seen in their songs, rhymes, and amusements. This impulse toward uniformity of sound and motion plays an important part in the self-directed games of children. They love system and order, and naturally tend toward it. Nothing interests and pleases them more than a calisthenic drill or a motion song. This natural love and tendency, reinforced by the equally natural imitative powers of the child, make the mastery of a code of school tactics both easy and pleasant. And this mastery tends to strengthen their respect and admiration for the teacher. For as soldiers naturally admire the military tactician who can form, move, and mass his men with skill and precision, so children respect the ability of the teacher who can move and manage a school with system and order.

The code of signals and commands should be uniform. The movements should be simple and necessary rather than artificial or ornamental. All commands should be short, direct, and easily understood, and the response to them prompt and decided. The will must act before the body can conform to the command. Hence such a system demands and cultivates alertness of mind, decisiveness of will, and promptness of action. It is a great source of discipline to the child, both mental and moral. It cultivates respect for law, adds positiveness to the temperament, gives decision of character, develops the virtue of obedience, and trains the habit of attention. And if sufficient time is allowed for the execution of each command, and prompt obedience is required, these results may be secured, time economized, and confusion avoided.

1. **Code for Calling or Dismissing Classes.** In calling classes the following signals or commands may be used: (a) ready, (b) rise, (c) march, (d) sit.

When the system is understood by the pupils the numerals, one, two, three, and four may be substituted if desired.

(a) *Ready.* At this command the pupils lay aside their work, take up the book or paper needed in the recitation, and assume a position ready for the next signal. If this is done promptly a moment of intense interest and silence follows, as all, in wide-awake expectancy and attention, await the next command.

(b) *Rise.* At this command all rise and face in the direction they are to move. Another moment of absolute silence follows as all attentively await the next signal.

(c) *March.* At this command every pupil steps out, quietly but firmly, with the left foot. If the children are very small, greater relaxation of mind and muscle is secured by having them skip or run rather than march. And it is surprising that this may be done with little more confusion than marching.

By either plan they pass to the place of recitation either at the board or in the seats. If the pupils are to stand, no further command is necessary. If, however, they are to occupy seats they will await, in silence, till the signal is given.

(d) *Sit.* At this command all are quietly seated and, in the attitude of attention and alertness of mind, hold themselves ready to begin the work.

2. **Code for Class Work.** In directing a class in blackboard work, the following may be used: (a) turn, (b) erase, (c) write, (d) face, (e) explain.

(a) *Turn.* The pupils must face the board, and at this command they promptly and quietly do so.

(b) *Erase.* At this command the board is prepared for work. Pupils may number off by threes, fours, or fives, so that no two, side by side, may have the same work. After their numbers or names are written upon the board they face the teacher.

(c) *Write.* At this command the persons to whom work is assigned turn and write the necessary conditions on the board. All others maintain their position until work is assigned.

(d) *Face.* The teacher may want to impart some general instruction, point out some error, give some special drill, or root the attention of the class in thought upon some specific point. The time for closing the work or for some explanation may have arrived. So, at this command, all stop work and quietly, but promptly, face the teacher.

(e) *Explain.* In case some part or phase of the process involved is to be examined critically, the teacher may call upon some one to explain. Instantly all face the work and fix the mind on it. The pupil with pointer in hand proceeds; to encourage attention the work of explanation may be suddenly stopped, and another pupil asked to continue the explanation.

As the purpose of all school government is the self-government of the pupils, so the aim of all school regulations is the self-direction of the individual. The freedom and self-control of the individual, however, must be in accord with the rights of others and the ethics of school management. And when these ends are attained it will not be necessary to follow the code rigidly. For as good school government gradually eliminates this necessity for

its exercise, so your school regulations tend to produce the ideal conditions that render their use more and more unnecessary. And while some simple directions for the movement of classes will always be needed, the necessity for adhering to a systematic code will gradually be removed.

3. Code for the use of Pupils. Thus far our code of tactics provides only for commands that issue from the teacher. But the pupil, as well as the teacher, has the power of initiative within certain limits, and consequently a system of tactics must provide signals through which he may express his willingness to take part, assent to, or dissent from any conclusions. This willingness is generally expressed through a movement of the hand. Many movements might be suggested, but for all practical purposes the raising and the lowering of the hand are all that seem necessary.

(a) *Raising the hand.* Good pedagogy demands that all questions shall be directed to the class and that every member be held responsible for the answer. Raising the hand may indicate :

1. A willingness to answer.
2. A desire to correct, add to, or dissent from the answer given.

(b) *Lowering the hand.* The hand is lowered :

1. When a pupil has been designated to recite.
2. When the answer given is satisfactory.

The hand when raised should be kept still. Patience is a virtue. So is eagerness, but it should not become boisterous. Pupils should not be permitted to speak or to raise hands until the pupil reciting has ceased. The mind will be benefited by holding the criticism or suggestion till the proper time.

Snapping of fingers and gesticulating with the arms should not be tolerated. Pupils who do not voluntarily indicate a willingness to take part must be called upon. Unwillingness to participate in the recitation may be due to timidity or to lack of preparation, but in either case it must not be disregarded by the teacher.

Physical culture demands that all pupils should be required to sit and stand erect, and to execute all bodily movements with grace and precision. When any one is speaking in the recitation the interests of courtesy and progress demand that all others observe absolute silence. Looking and listening are the attitudes of attention, and no teacher should try to teach or ask a pupil to recite without demanding them. We are aware that attention cannot be commanded or demanded, but its external attitude can. And it is the duty of the teacher to require it, for it is difficult for the pupil to assume and keep this external attitude for any length of time without giving also that fixedness of mind that is the very essence of attention.

III.—METHODS OF DIRECTING QUESTIONS TO THE CLASS.

As a rule, teachers ask and pupils answer questions. It is not improper, however, when prompted by the right motive, to reverse the order. Occasionally, too, pupils may be permitted to question each other. But these are the exceptions, for pupils are generally without that insight into matter and method which forms the basis of all skilful work in the art of questioning. And while the teacher generally is responsible for the manner in which the questions are directed to the class, he is equally responsible for the way in which pupils answer.

It is evident in the matter of asking questions that two avenues are open to the teacher. He may either direct the question to the individual who is to answer it or he may direct it to the class in general. The first may be called the *individual* and the second the *general* method.

1. *Individual method.* This plan names the individual and then asks him a question; or it may ask the individual to rise, and then direct a series of questions to him.

This is an ideal plan when there is but one pupil in the class. But it is not conducive to interest and attention in larger classes. When a pupil is named before the question is directed to him, the other pupils are likely to conclude that the question and the answer are individual matters, and therefore give little attention to either. The same is true when he is asked to rise and answer a series of questions. It is safe to conclude, then, that while this method is good for the individual who is answering, it is not the best suited to class instruction. And yet some teachers with advanced pupils can so use it as to overcome these disadvantages.

2. *The general method.* By this method the teacher states the question in a general way to the entire class, and then calls upon some individual to answer.

While the teacher is asking the question each child naturally assumes that he may be the individual designated to answer it. This demands alertness of mind from all, and, if the answer is short, each may respond to it mentally before the pupil is named who is to frame his answer in oral language.

And the pupil who answers mentally, and is ready and eager to respond orally, is benefited only in a degree slightly less than the one who actually recites.

This method holds each pupil responsible for the question and for its answer. The teacher with a class of ten pupils who can make ten minds answer the question is ten times as valuable as the one who can make but one respond to it. It is evident, then, that this plan, under ordinary circumstances, is preferable to the other. For class progress depends not so much upon the *individual who recites orally* as upon *what each member thinks* while one is speaking. Perhaps there is no better sign of a teacher's incompetency than to see ten pupils marking time in a recitation while the one who is reciting marches forward.

IV.—METHODS OF CALLING FOR ANSWERS.

No discussion is needed to show that there are two and only two methods of calling for answers. Either the individual or the class as a whole is asked to answer. This gives us:

1. The individual method.
2. The concert method.

1. *The individual method.* By this method the individual rises and calmly and deliberately tries to frame the best answer to the question he can. He strives to make the answer clear, concise, and definite, and from that effort comes strength of mind, clearness of thought, and accuracy and definiteness of expression.

The same results come, though perhaps in a less degree, to every member of the class who critically follows the thought and expression of the individual answering.

(a) The order of calling upon individuals may be *consecutive* or *promiscuous*. The former asks the pupils to recite in consecutive order as they stand or sit in class.

1. *It saves time.*

2. *It distributes work evenly and none are omitted.* But it is generally destructive to class interest and attention.

3. *It may not demand general preparation, as pupils may prepare only what they expect to recite.*

(b) The *promiscuous method* calls upon an individual here and there to recite, as the teacher may desire or as conditions may suggest:

1. *It helps to sustain interest and hold attention by requiring all to be ready at any moment.*

2. *It affords the teacher the opportunity to ask the question needed by the individual and to gauge it to his particular requirements.* But it requires more time than the consecutive method, and may not distribute the work as equitably.

2. *The concert method.* By this method all the members of the class, or as many as desire, answer the question simultaneously. If the answer is short and definite, all may give it in a few words, otherwise the concert answer is noisy, boisterous, and confusing.

This method has little to recommend it, and yet it may be used to advantage in certain kinds of work. Take, for example, word-recognition in a primary class involving spelling and pronunciation. All may look at the word for a moment silently, try to make it out, and then pronounce it in concert. Or, if further examples are needed, notice its usefulness in oral number drill in any of the fundamental operations; six, plus four, less three, are how many? If the problem is presented at a rate suited to the mental grasp of the class, each pupil makes the calculation silently, and at a signal from the teacher all answer in concert. It is evident that these drills may be so timed that only the quick minds may be ready to answer. This helps and encourages the few to the disad-

vantage of the many. But they may be timed for the many, too, and the quick minds required to keep back the answer until the slower ones are ready. This method is not to be recommended generally, and yet there are many occasions when the skilful teacher can use it to advantage.

(a) Among the limited advantages of this method the following may be stated :

1. *It encourages the timid pupil to take part.*
2. *It helps in a formal way to train memory.*
3. *It helps to arouse enthusiasm.*
4. *It aids the bright pupils who lead in the work.*

But it is likely to discourage study in all except the leaders.

(b) *Disadvantages.*

1. *It fails to test individual preparation, power, or skill.*
2. *It is noisy and boisterous.*
3. *It trains a few to be leaders and the many to be followers.*
4. *It gives little help.*

TOPICAL OUTLINE

PLACE AND TACTICS OF THE RECITATION

I.—PLACE.

1. The group plan or class plan.
2. The scattered or seat plan. The former has some advantages :
 - (a) It is favorable to class management.
 - (b) It is favorable to class interest.
 - (c) It is favorable to class attention.

II.—CLASS TACTICS.

1. Code for calling classes.
 - (a) ready, (b) rise, (c) march, (d) sit.
2. Code for class work.
 - (a) turn, (b) erase, (c) write, (d) face, (e) explain.

3. Code for use of pupils.

(a) Raising hand.

1. Denotes willingness to take part.
2. Denotes a desire to correct, add to, or to dissent from answer.

(b) Lowering hand.

1. When some pupil has been designated to recite.
2. When the answer is satisfactory.

III.—METHODS OF DIRECTING QUESTIONS TO THE CLASS.

1. The individual method.
2. The general method.

IV.—METHOD OF CALLING FOR ANSWERS.

1. Individual.

(a) Consecutive.

1. Saves time.
2. Distributes work equitably.
3. Destructive of class interest.
4. May not encourage preparation.

(b) Promiscuous.

1. Promotes class interest.
2. Adjusts question to suit the pupil.

2. Concert.

(a) Advantages.

1. Encourages timid pupils to take part.
2. Aids slightly in training memory.
3. Arouses enthusiasm.
4. Trains a few leaders.

(b) Disadvantages.

1. Fails to test individual preparation, power, or skill.
2. It is noisy and boisterous.
3. Trains a few to be leaders and many to be followers.
4. Renders little aid to the dull child.
5. May discourage study.



PART III

CHAPTER V

THE USE OF BOOKS IN THE RECITATION

A book that remains shut is but a block.

Selected

No book is so bad but that something may be learned from it.

PLINY

CHAPTER V

THE USE OF BOOKS IN THE RECITATION

Books are the best things well used ; abused, among the worst.—
R. W. EMERSON.

THE school and all it contains is only a means to an end. This end is the moral and intellectual development of the child. And the value of any part of the means is determined by what it contributes directly or indirectly to that end.

Among the many means employed in the school, text-books occupy an important place, and the aid they render in reaching the desired end is determined by their quality and the use made of them. It is not our purpose to discuss the use of text-books in general, but merely to point out certain places in the school work where they may be used to better advantage.

Whatever opinions may be held concerning the use of school books, it must be admitted that their quality has been greatly improved in recent years. In pedagogical plan, in the grade and arrangement of subject matter, and in general attractiveness, they far surpass those of former years.

This improvement is especially noticeable in the books prepared for the lower grades of the elementary school. The whole field of elementary work has been most carefully surveyed. The lines of approach to each study have been marked out, and the whole subject matter graded and arranged so as to lead the child along the lines of least resistance to a complete grasp of the sub-

ject. And upon the whole much light has been thrown upon this department of school work which was once so vague and shadowy.

I.—IN TEACHING ELEMENTARY ARITHMETIC.

This is especially true in the domain of elementary arithmetic. Authors have examined that field from every view-point, and each has presented what seemed to him a sane and sensible treatment of the subject, based upon the principles of modern pedagogy. This has given us a variety of books differing greatly both in matter and arrangement. We have the Grube, the spiral, the topic, and the grade plans, each claiming preference because of some special feature.

These books were made to be used. Their intended use may not always be clear to the teacher, but in the mind of the individuals who prepared them, the use and the purpose of the book not only determined its scope and plan, but actually graded and arranged its subject matter.

We do not care to enter upon a discussion of the merits of these various plans. That would lead us too far from our course and into the domains of pedagogical and mathematical discussion. But rather would we point out some of the results that come from the non-use of the elementary text-books and some of those that would follow its proper use. This subject, then, may be considered under two heads:

1. The non-use of the text-book.
2. The use of the text-book.

1. The Non-use of the Text-book. It is somewhat surprising that the text-books in elementary arithmetic, prepared with so much care and purchased at such cost

out of the public funds, are seldom used by either teacher or pupil. From the time the child enters school until he is able to use a text, the teacher ordinarily discards the book and proceeds to teach the subject according to his own peculiar notions and improvised plans. These plans, or rather absence of plans, consist in writing on the board each day a few disconnected and hastily prepared problems for the child to solve. This furnishes his seat work in number. In the recitation he is asked to solve some of them over again, or such others as the teacher may hastily improvise. Occasionally he is given an oral drill that has neither plan nor system, and that has no relation whatever to the written work. Day after day, and sometimes year after year, this hap-hazard, hit-or-miss, crazy-quilt work proceeds.

The teacher who does this practically assumes that, without previous thought, he can improvise a better plan, suggest better subject matter, and guess out a better graded list of problems in the midst of the worry and care incident to the school-room than an author can prepare in the quiet of his study. Such an assumption is absurd, and this method of procedure has scarcely a redeeming feature.

Absurdity of
Improvised
Plans.

(a) *It is unsystematic.* It has no plan, no beginning, no development, no course, no aim, no end. It is a sort of blind-man's-buff arrangement that presents to the class, from day to day, the disconnected and unrelated problems the teacher may happen to suggest when the class is to be taught. It lacks arrangement, grade, and order, and is as unsatisfactory as it is unsystematic.

(b) *The work is limited generally to abstract problems.* What it teaches, therefore, is a little abstract number,

not arithmetic. By it children finally learn to perform the fundamental operations, but they cannot apply them to the solution of problems that require thought.

The reason for such a condition is readily found. It is so easy to write abstract problems on the board, and requires so much time and labor to improvise and write out concrete ones, that the latter are seldom used.

Abstract problems give skill,—that is, ability to calculate; concrete examples give not only skill, but also mathematical power,—that is, the power to apply the principles of arithmetic to practical purposes. The former makes the child a good accountant, but not a good mathematician; the latter makes him both. The one trains him to calculate, the other to calculate and to think.

(c) *The little concrete work given is characterized by sameness.* It lacks grade, variety, and completeness. It could not be otherwise under such improvised plans. In grading and arranging the subject matter of the text an author uses many concrete problems of many different kinds, each introduced at the right place to develop the general plan. The teacher who discards the book may not think of a dozen different kinds. His mind is likely to run in certain channels and to suggest only a few types.

The pupils become strong in their ability to solve problems belonging to the types found in the particular mathematical ruts in which the teacher's mind runs, but the general field of concrete work is almost untouched, and the ability to think out the solution of a problem of a new type is wanting. This may not be the root of all evils in the teaching of arithmetic in the elementary school, but it is the root of some of them.

(d) *This work does not prepare the child for the use of the*

text-book. When the pupils have wasted much time and effort in learning to perform the fundamental operations by this improvised plan, they are at last given a text-book; but they have no power to use it, and, although they have been studying number for four or perhaps five years, they must start with the first lesson in the book. In schools where this absence of plan prevails children are often found doing fourth-grade work in abstract number and first-grade arithmetic in concrete work.

The non-use of a text in elementary arithmetic is especially detrimental to the mathematical interests of the children in the rural schools. These schools experience a change in teachers almost annually. And if the text-book is not used as

The Non-use
of a Text in
Rural Schools.

a guide to the work the teacher can have no definite knowledge of the aims and plans of his predecessor and of the scope and character of the work done by him. As a result, the work covering a period of years is unrelated and fragmentary and without that controlling aim that unifies and systematizes it.

Even in the graded school of a town or city the same detached work is likely to follow the non-use of the text. Close supervision, according to a course of study, may tend to minimize these unsatisfactory conditions, but it requires so much time and effort to direct this work that they are likely to appear in the presence of the best supervision. Indeed, in the absence of suitable texts, it would require almost the entire time of a principal in a school of a score of rooms to organize, systematize, and supervise this work.

2. The use of the Text. But the text-book offers a different plan. It may not be the best, but it is at

least a plan, and, although it may be defective, it is certainly far superior to the patched-up guesswork of the ordinary teacher. The proper use of the text-book in this work is most helpful.

(a) *The text-book grades the work.* It puts the right problem in the right place. What to teach next, and how difficult to grade the work, are questions which lie beyond the grasp of the average teacher. They belong to a higher realm of thought than that of the class-room. It is unreasonable to expect the ordinary teacher to answer them. The author may not have worked out the most satisfactory answers to them, but they are better than he could improvise in the presence of his class.

Every text-book answers these two questions. It not only designates the next step, but also grades the subject matter to suit it.

The text aims to grade the subject matter and to designate the kind and to some extent the quantity of it needed. It supplies both abstract and concrete work in the proportions seemingly necessary to give to the child both skill and mathematical power. Every author has some end in view. He knows that certain steps must be taken in order to attain the end. He, therefore, plans his work and grades and arranges the subject matter according to the requirements of the plan. He not only supplies suitable varieties of concrete work, but strives also to grade them to meet the exact needs of the expanding intellect of the child.

(b) *The text-book gives unity to the work.* The work of to-day must be unified with that of yesterday, and both with that of to-morrow. Lesson must be linked to lesson in the chain of instruction. A number of detached and unrelated problems is not enough. There

must be a systematic plan, a controlling aim, a natural development. These are the underlying principles that give scope, character, and unity to a text-^{Supplementing} book. Every problem is a part of a re-^{the Plan.}lated whole, and is, therefore, necessary to the completeness of the work. Something may be added, but unity and completeness demand that nothing shall be omitted. Thus the text-book tends to unify the work and to give to it completeness and proportion.

In the use of the text-book the teacher should present the first lesson, then the second, then the third, and each consecutive lesson in the order given. He may supplement the work at any point, but unity demands that no lesson, no step, and no part of the work should be omitted. Thus the child moves forward in accordance with the plan of the work until he is able to use the text.

During this period the child must have both seat and recitation work. And if he is too young to use the book the problems written on the board for seat work should be taken from the text of the lesson under consideration, or they should be similar to them. The oral drills and the additional problems given, should supplement the plan of the book rather than to deviate from it. The whole purpose of the teacher should be to develop the child's mathematical power as designed in the plan and purpose of the book, and not according to his own peculiar notions. The plan may be defective, but a poor plan is better than no plan.

To throw aside the book is regarded by some teachers as an evidence of wisdom and strength.

They reject its use as slavery to text-book formality. This notion is scarcely true. There is no more slavery in it than in following the texts in reading, geography,

What is
Slavery to
Text-book
Formality?

history, or any other study. Every book arranges a series of lessons or exercises along which the child is to be led to the mastery of a subject and designates at each point what shall come next. It is like a stairway up which the child must walk. Each step is visible from the one below it, and the easiest approach to the next step is from the one on which he stands. The main purpose of a text-book is to point out the next step and to make the ascent to it easy and natural, and there can be no slavery in accepting this aid so necessary and which can scarcely be expected from any other source. The liberty of the teacher consists, not in rejecting the text, but in presenting its lessons in his own way.

II.—IN TEACHING ELEMENTARY LANGUAGE.

What has been said concerning the use of the text in elementary arithmetic applies with equal force to work in elementary language. The oral lessons that prepare the child for the use of the text should be organized and systematized according to some plan, possibly the one which the child is to use when the book is put into his hand. Improvised plans and unrelated lessons are not to be permitted in language any more than in arithmetic. Aim, grade, order, and plan are just as important in this work as in any other.

It is scarcely necessary to extend this discussion to other subjects, since the text-books in all, save elementary language and arithmetic, are usually followed.

III.—IN TEACHING ADVANCED ARITHMETIC.

The advanced texts are ordinarily prepared according to the topic plan, and as a rule they are followed. Our desire, then, is not to discuss the use or the non-use of

the book, but rather its abuse at certain places, and to present a few thoughts on this subject that seem practical and may prove helpful and suggestive.

1. Rules and Processes. In elementary work processes always precede rules. This is generally the best order also in advanced grades. The first lesson in the study of a particular subject should be directed toward the mastery of the process. Problems are stated, examined, and solved, not to get the answer, but to reveal the process step by step. When the process is fairly well understood, it is well to turn to the rule and try to comprehend it by and through the process. The one is thus made to verify, clarify, and fix the other. The aim is not only to know the rule, but to understand it through the process.

Verify, Clarify,
and Fix the
Rule by
knowing the
Process.

The mastery of the process is of first importance. It is the grasp of it that will remain and enable the child to formulate the rule when needed. A rule is simply a sign-board to direct the pupil in his work. It is a statement of the necessary steps in a process in their consecutive order, and the pupil who knows these steps can make his own rules.

The mastery of processes is the pivot upon which much of the teaching of arithmetic turns. If this part of the work is well done there will be little trouble with the problems that follow.

2. Text-books in the Class. The best work will be done in higher grades by prohibiting the use of text-books in the recitation. Many teachers permit the use of books and assign by number, for class recitation, the same problems the pupils have already solved. This plan may be helpful when the teacher expects to

emphasize some phase of the work probably overlooked by the pupils, or when it is necessary to have some problem re-solved by a bright pupil for the benefit of those who failed in its solution, but the use of books in class is not productive of the best results, and should not be permitted except as necessity demands.

Such a plan makes the pupil a slave to rules rather than a master of processes. The book is a crutch upon which he leans. It gives him rules, principles, tables, and answers, and without them he is helpless. A class thus taught seldom knows half the tables of weights and measures used in every-day practice. The pupils are weak and dependent upon the book rather than strong and independent in mathematical thought and action.

The use of the book in class makes the pupil dependent upon the eye, but fails to develop a quick grasp of conditions through the ear. Both eye and ear must be trained. The preparation of the lesson from the book trains the former, and the recitation should not neglect the latter. Some people seem to be *eye-minded*. They cannot understand conditions until they are presented through the eye by words, diagrams, or drawings. Their ear seemingly has been neglected. Their mind is not alert and quick to grasp conditions presented through the ear.

Eye-minded
and
Ear-minded
People.

To read a problem to a child and expect him to get and hold its conditions is of vital importance in training the mind through the ear. It demands a quick mental adjustment and an intense concentration upon passing words. The camera, when properly focused and adjusted, catches instantly and holds firmly the exact image of the thing presented; so alertness and adjustment of mind through the ear gives exactness and tenacity to memory.

The power to grasp conditions quickly through the ear is most serviceable. A sermon or a lecture is delivered but once; if you do not catch it the loss is yours. The office boy without this power must be told the same thing again and again before he knows it. Children in school fail to understand announcements and assignment of lessons, not because they were not made, but because they failed to catch them. And arithmetic thus taught, trains the mind to adjust itself quickly and to grasp and retain firmly what it hears.

The use of the text-books in the recitation makes careless, indifferent ears, and careless ears make dull minds, to which a fact must be repeated again and again; and dull minds make little progress. Read or state the problem clearly to the pupil. At first it may be necessary to repeat it, but ere long the mind will so adjust itself through the ear that the conditions are grasped when once stated. Such a plan will produce better mathematicians, more independent in thought and action; it will develop alertness of mind and quick grasp of conditions through the ear, and make the memory more exact and tenacious.

3. Problems used in Class. The problems solved in the preparation of a lesson should not, as a rule, be used in the recitation. This does not apply when pupils have failed in their attempts to solve certain problems or when some complex feature in a problem is to be examined by the class. But upon the whole the problem material of the recitation should be new, similar to that found in the lesson or in some former lesson, yet differing in some slight detail, and crisp and fresh with the novelty of newness. These problems may be original—coined by the

Use New
Problems in
Class Exercises.

teacher as occasion demands—or they may be taken from the corresponding parts of some other text which the child has not seen.

Generally speaking the recitation is for instruction and drill. But it also affords an opportunity for the child to learn by self-effort without the aid of instruction, and this is as important as the occasion for instruction and drill.

In the work of instruction a new problem is just as good as an old one, if not better, while it has the added advantage of newness to arouse the interest and hold the attention. New things are always full of interest to the child, and the deeper the interest the more favorable the opportunity for instruction. Thus new problems are more desirable for the work of instruction than old ones.

For the same reason new problem material in drill work is preferable to that which is old. Drill is intended to give skill or to deepen impression. And problems once solved by the pupils have lost part of their value for that purpose.

The opportunity to learn is greater with new problem material than with that once examined. This may not be true with advanced students in the quiet of their study, where concentration of mind and intellect penetrates beyond the depths of former efforts, but it is true in the average class recitation. Thinking out a New Problem is better than remembering an Old One. is the process by which the mind acquires or learns with or without the aid of the teacher; and in solving over again in the class the problem solved in the seat the mind is likely to *remember* what it did, rather than to *think* out the steps by which the end was reached. In a problem en-

tirely new the child is required to think his way through it. Thus new problems in the recitation afford the child the best opportunity to learn and the teacher the best occasion for instruction and drill. Through interest they make the mind more impressionable, more retentive, and more facile, responsive, and skilful in action.

4. The Treatment of Problems in the Recitation.

Every problem contributes something to the mind that tries to grasp and solve it. The extent of the contribution is determined by the treatment which the problem receives by the child under the direction of the teacher.

Some teachers simply assign problems and have them solved without question, comment, suggestion, or explanation; under such conditions the recitation is almost a failure, and the results that come to the child for his work are little beyond what came from study.

In order to give the highest and best reward for the effort, problems should be clearly grasped, correctly solved, and critically examined and explained.

(a) To grasp and understand a problem is the first step.

As it is stated, the pupil catches the facts and writes on the board enough of them to aid the mind in keeping before it a clear statement of the conditions. The first stage in this step is to see the conditions. The second is to understand them,—that is, to interpret them fully through what the mind already knows of the processes involved in them. This second stage is vital. It is at this point that the mind does its best thinking. The conditions are examined and analyzed. The mind, through inductive and deductive reasoning, reaches the right conclusion, and the pupil sees clearly, not only the problem, but also how to solve it. Every problem is a key to its own solution just as soon

Seeing the
Conditions.

as the student understands its conditions through a knowledge of the processes involved in its solution.

(b) *The second step is to work out in neat and accurate form the solution.* Accuracy and neatness are virtues in other fields than mathematics, and children should be trained into those habits by demanding them in the solution of every problem. Calculation must be exact, statement clear and definite, and the consecutive parts of the work presented according to the demands of analysis and logic.

The first step must always precede the second. The knowledge that guides must always go before the effort that executes. The mind must always go in advance of the hand.

Occasionally the operation of these steps, in separate periods of time, is very marked. The pupil sometimes actually pauses in external work in an effort to know what to do. It is useless to proceed at random or by guess, and the hand ceases its labors while the mind tries to discover the light that is to guide it aright. On such occasions it is not difficult to see that the first step precedes the second.

But sometimes the period between them is so short that they seem to be almost simultaneous. A clear grasp of conditions and a definite knowledge of what to do may flash across the mind instantly, when it discovers in a moment what will require minutes to execute. But whether these periods seem consecutive or simultaneous, it is evident that the mental effort that guides must always precede the mechanical one that executes.

(c) *The final step in the treatment of a problem is its critical explanation as found in the solution.* Here, as in

the examination of written work, the burden of criticism must be put upon the class, the teacher merely adding what the pupils overlook. This is the teacher's opportunity to give needed instruction and to train the child in correct habits of thought and expression. If the teacher is ever to aid the child in developing a clear, analytic, logical mind, strong in inductive and deductive thought, this is one of the important points at which such aid must be given.

5. **What to do with the Unsolved Problems.** If a child is given a clear and definite knowledge of the process and principles he will be able to solve most of the problems. But occasionally with the average student, and frequently with the dull ones, there are problems beyond their capacity to solve. What to do under such conditions is a question as practical as it is important. To this question three answers may be given.

(a) *The teacher may solve the problem for the child or have some pupils do so.* If in addition to this such instruction is given as will enable the learner to comprehend it, some good will result from such aid. But to solve the problem is of little service unless the pupil will himself try to understand its conditions in the light of the solution.

(b) *The teacher may tell the pupil how to solve the problem.* This, too, is of little value to the child. And if this is all that is done it is scarcely worth the time it takes. But if the teacher explains the steps taken in the process of solution, so that the child fully understands them, this aid may be made most serviceable.

(c) *The teacher may lead the child to understand the conditions of the problem and the processes involved until the learner discovers for himself how to solve it.* This is the

best aid the teacher can render. Indeed, it may generally be regarded as unwise either to solve the problem or to tell how it should be done.

Every problem fully comprehended suggests its own solution. The point of attack for the teacher, then, is the conditions of the problem, not its solution. Examine them and the principles and processes by which the problem is to be solved. As soon as the learner fully understands them, the light dawns from within and he discovers what to do. The key to the situation at this point is not what you do for the child or what you tell him to do, *but his own thought*. The source of his power is within. And the moment he interprets mathematically the conditions of the problem with what he knows of the process and the principles involved the difficulty will disappear.

To solve a problem for the child, to tell him how to solve it, and do nothing more, gives little strength of mind, suppresses the spirit of self-helpfulness, and tends to make him a timid mathematical weakling, utterly dependent upon others, and always willing to follow because he is unable to lead. But to throw light on the conditions of a problem, and on the principles and processes involved, gives that strength of mind that comes from vigorous thought and concentrated effort; that satisfaction and encouragement which spring from discovery; and that calm confidence and self-reliance which come from tested strength and final victory. As long as a child clings to a chair in learning to walk he will develop little strength and steadiness of limb. These come in the largest measure from self-directed efforts to stand and walk without external aids. So in mathematics the

Problems
comprehended
suggest their
Own Solution.

best results come, not from seeing what others can do or from being told what to do, but rather from individual discovery and self-directed mental effort. It is the teacher's province to explain conditions, principles, and processes; but *discovery* and *achievement* belong to the child, and to take from him the joy of the former and the strength and self-reliance that come from the latter is *mental robbery*.

The Teacher
may suggest,
but Discovery
and Achievement
belong to
the Child.

IV.—IN TEACHING ELEMENTARY HISTORY OR GEOGRAPHY.

The fourth, fifth, and sixth grades are critical periods in the child's school life. In the three years preceding them he has learned to read, to write, and to spell; he has laid the foundation for his work in language and number; and by oral instruction has acquired some knowledge of elementary geography through the observation of his environment, and of history through story and biography.

In these grades he is to face a new problem. He has *learned to read*, and he is now to *read to learn*. The elementary texts in geography and history are given to him to be studied. His ability to read is to be the medium through which he is to acquire knowledge in these and other fields and by which he is to train himself in the art of study. Up to this point he has been acquiring the *tools* with which he is to work; now he is to begin to *use* them, and the problem is how may this be done in order to become skilful in their use, and at the same time make them sharper, stronger, and better instruments of service.

Two methods of procedure are open to the teacher at

this point, and the one adopted will determine to some extent the progress of the child in the study and in the art of study, as well as the extent of his likes or dislikes for both. The first of these may be called the *irrational* and the second the *rational* method.

1. **The Irrational Method.** By this method the child, without aid, suggestion, or direction, prepares the lesson from the text as best he can, and the teacher, instead of trying to teach in the recitation, simply examines him. The child gets little from the book, and the teacher gets even less from him. And since an examination trains the child to give rather than to get, the periods of preparation and recitation are largely wasted, first, because the child has not acquired a knowledge of the lesson, and second, because he has not increased his power to study. This method of procedure invites failure since the child does not know how to study and the teacher fails to teach.

The results of such methods are as apparent as they are unsatisfactory.

- (a) *Wasted time and wasted effort.*
- (b) *Little progress in the subject or in the art of study.*
- (c) *Dislike for the subject and for the art of study.*
- (d) *Discouragement and all its attendant evils to both teacher and pupil.*

2. **The Rational Method.** Under this method the teacher is careful to prepare the way for text-book work by suitable oral instruction, and to assign the lessons in such a way as to aid the child in their preparation. He is just as careful to see that the major part of the recitation is given to *actual instruction* rather than examination. Indeed, many of the recitations are study periods in which *the teacher studies the lesson with the class.*

Such periods differ but slightly from the teaching part of the recitation. Both aim to have the child see and understand the subject matter, but in addition to this the study period aims also to train the child in the art of study.

The following paragraph from one of the elementary histories with the questions, answers, suggestions, and comments will serve to illustrate just what we mean when we speak of trying to train pupils in the art of study by studying the lesson with them either in or out of the recitation :

“THE BEGINNINGS OF NEGRO SLAVERY (1619).—The year 1619 is one of the most famous in the annals of Virginia. Then it was that a Dutch vessel landed at Jamestown and sold twenty negroes to the planters. At this time slavery existed in all the nations of the world, and found its way into all the English colonies. In Virginia the soil, climate, and chief occupations especially favored it.”

The pupils with text-books in hand are brought forward to the place of the recitation. Instead of examining them, the time of recitation is devoted to studying the lesson under the direction of the teacher. By way of introduction and to prepare the minds for what is to follow, the teacher reviews briefly the history of the colony. He inquires about its settlement, its location, the nature of its climate, the quality of its soil, the character of its people, and any other knowledge that will lead directly to the lesson under consideration. This is preparation,—the first step in the recitation, the purpose of which is to get the mind ready for the work of presentation.

Studying a
Lesson with a
Class.

The pupils now open their texts and under the teacher's direction examine the paragraph before them. The first

thing is to lead all to understand, through the use of dictionary, discussion, or illustration, the meaning of the terms "slavery," "famous," and "annals." The remaining words in the text are probably within their comprehension. Then comes the formal study of the text, directed by such questions as the following: What is the title of this paragraph? In what colony did slavery begin? How did the negroes get to Jamestown? What was done with them after their arrival? Why did the planters purchase them? What was the condition of the world at that time with reference to slavery? What conditions in Virginia favored slavery? Who should be held responsible for the introduction of slavery into the colony? What do you think of the part played by the Dutch in this matter? By the planters? By the negroes?

As each question is asked the pupils run their eyes over the paragraph to find the answer. The tactics used are the same as in the recitation. When the pupils discover a satisfactory answer to one question another is asked.

The purpose of these questions is not so much to fix truth or to arouse profound thought,—the pupils are scarcely ready for this,—but rather to *direct them through the ear to discover through the eye the leading points in the paragraph*. Thus the entire lesson, topic by topic, is studied.

This sensible method of procedure has some advantages worth noticing.

(a) *It removes as far as possible all causes for discouragement by training the child to help himself.* And, as Horace Mann once said, "The teacher helps his pupils most who helps them to help themselves."

(b) *It is likely to develop in the child a love for the study pursued and for the art of study.* Both of these results are most desirable. The child who finds pleasure in the art of study and in the knowledge that lies in some particular field has, through self-improvement, the keys of culture already in his hand. The love of history, for instance, is more valuable to the child than all the knowledge of it he can ever acquire in the school. The treasure in this domain is so abundant and so rich, and the few facts presented in school are so meagre, that the love that will lead the child to survey this in after life and make part of it his own is a leading object of its study. A single chapter in the school history about Columbus may open the gateway to the great field where thirteen thousand volumes on the life and work of the great discoverer may be found to enrich the mind and gratify the cravings of the history-loving student. The love of truth and the love of study are at once the basis of student habits and the foundation of great scholarship.

Opening the
Gateways.

(c) *It trains in the art of study.* This is the great contribution of this rational method. Every child's first attempt at study is to memorize the lesson. To him knowledge is a thing of words, not thought; of the memory, not of the mind. Unaided, children pursue this phantom for years before they discover their mistake and acquire any particular proficiency in the art. By this method, guided by a skilful teacher, they soon discover that to study is to see and understand the leading points, to grasp the vital thought in the text, and not to memorize the words.

Training the
Pupil to Study.

In first taking up the texts in elementary history and geography four such lessons are not too many each week.

Thus to study the lessons with the class four times each week, and on Friday review the subject matter of them with the books closed, is an excellent plan. And the aim should be not so much to give the pupils an extensive knowledge of the facts, but rather to lead them to love the subject and to train them to husk thought from the printed page.

TOPICAL OUTLINE

THE USE OF TEXT-BOOKS IN THE RECITATION

I.—IN TEACHING ELEMENTARY ARITHMETIC.

1. The non-use of the text-book.
 - (a) It is unsystematic.
 - (b) It teaches generally only abstract number.
 - (c) Its concrete work is characterized by sameness.
 - (d) It does not prepare for use of text-book.
2. The use of the text-book.
 - (a) It grades the work.
 - (b) It gives unity, system, variety, and completeness to the work.

II.—IN TEACHING ELEMENTARY LANGUAGE.

Follow a plan similar to that suggested in elementary arithmetic.

III.—IN TEACHING ADVANCED ARITHMETIC.

1. Processes before rules.
2. Text-book in class.
3. Problems used in class.
4. The treatment of problems in the recitation.
 - (a) Understand the conditions.
 - (b) Solve the problem.
 - (c) Explain the problem.
5. What to do with unsolved problems.
 - (a) The teacher may solve them.

- (b) The teacher may tell the child how to solve them.
- (c) The teacher may lead the child to grasp the conditions and to discover the solution.

IV.—IN TEACHING ELEMENTARY HISTORY OR GEOGRAPHY.

1. The irrational method.
 - (a) It wastes time and effort.
 - (b) It gives little progress in the subject or in the art of study.
 - (c) It gives dislike for the subject and for the art of study.
 - (d) It brings discouragement to teacher and pupil.
2. The rational method.
 - (a) It removes discouragement.
 - (b) It develops love for the subject studied and for the art of study.
 - (c) It trains in the art of study.



PART III

CHAPTER VI

ENGLISH IN THE RECITATION

Literature is the tongue of the world.

Words are the wings of action.

LEVANTER

When men think clearly and are interested, they express themselves with perspicuity and force.

F. W. ROBERTSON

Grammarians are the guardians, not the authors of language.

SENECA

CHAPTER VI

ENGLISH IN THE RECITATION

The power to understand rightly and to use critically the mother-tongue is the flower of all education.—PRESIDENT ELIOT.

THE ability to use correctly and forcibly fluent and facile English is a great accomplishment. President Eliot says it is the flower of all education. And that flower is as rare as it is desirable. The late Dr. Morgan remarks that, "composition, clear, forcible, pleasing, correct description, accurate narration, convincing argument, persuasive appeal, elegant conversation, and winning oratory are accomplishments possessed by few." This may not be very complimentary to the schools, but it seems to be true. At least the reports that come from the university, the college, and the high school seem to verify this statement. They indicate that the students generally are weak in their power to spell and punctuate the language, and weaker still to speak with force and elegance the mother-tongue. The same criticism applies to the public school, and while vigorous efforts have been made to remove the defects, yet the almost universal verdict of "unsatisfactory English" remains as the nightmare of the teachers' dreams. In short, it is generally admitted without question that the great majority of the people "murder the king's English," that few speak it with facility and accuracy, and that not one among many is able to use it with ease and elegance.

This most unsatisfactory condition must be the result of certain causes, and to remove it we must strike at the

very roots from which it grows. It is wise, then, before suggesting a remedy, to point out what seems to be some of the most prominent causes of this defective English found in every school, from the kindergarten to the university.

I.—CAUSES OF DEFECTIVE LANGUAGE.

1. Heredity and Home Environment are the Sources of much of our Defective Language. "The child learns his mother-tongue by absorption from his environment, and he learns it and can learn it in no other way." This is the language of Dr. Samuel Thurber, and it seems to me to express the first fundamental principle of instruction in English. The home environment of the child is antagonistic to the best results in language-training. This is especially true in communities where there is a variety of languages used in the homes. Almost every race is represented in some of our schools, and the language department is nothing short of a linguistic remnant counter. Hundreds of children enter them each year unable to use or understand good English. They have little hereditary ability, and less inclination to study our language from the standpoint of culture and elegance. The garbled English of the home and the street is all they desire; to them it seems all that is necessary. Their hereditary impediments toward our language, their indifference to the high standards of excellence set up by the school, their crude and clumsy statements, and their mixture of dialects and provincialisms, not only render instruction in English difficult, but tend to corrupt the vernacular and to rob it of much of its grace and beauty. And, try as we may, it seems almost impossible

Absorption
from the
Environment.

to overcome the evil influences and tendencies of this home environment.

2. **Insufficient Time given to the Subject is possibly another Cause of our Defective English.** The last century is noted for the rise and commercial rivalry of a half dozen great nations. The spirit of political, national, and industrial supremacy gave added interest to the study of the vernacular in most of them. At the great school conference at Berlin, in 1890, the Emperor said, "We wish to educate young Germans, not young Greeks or Romans." This emphatic statement, backed by centralized authority, had its effect, and as a result more time was given to the study of German and less to the ancient languages. The spirit of national rivalry was not entirely opposed to the Cape of Good Hope route to culture, but it thought it best to send some of its young men by way of the Suez Canal.

The Emperor's
View.

That century gave England the commercial supremacy of the world. Her sails whitened every sea and her language went with her flag to every port. As a result more time was given to the study of her language. The same is true of France, where one-fifth of the time in the elementary school is devoted to her language and literature.

It is difficult to ascertain exactly what proportionate part of the whole time of our schools is given to language, but, judging from results, it is certainly insufficient. In some schools literature is almost entirely ignored, composition slighted, and the modicum of time devoted to technical grammar is all that is given to the work of English. In many schools it is different; but perhaps in all of them the subject does not receive the time its importance demands. But there are signs of a

change. Educators everywhere are studying the problem, and more time is assigned to the work than ever before.

Then, too, our national pride has been touched and its influence will be felt. The new century finds us in the front rank of the nations as one of the world's great powers. Our industrial supremacy is conceded, our rights are re-
 Anglo-Saxon Anglo-Saxon influences are in con-
 Supremacy. trol both at home and abroad. At present they promise to dominate the civilization of the future. If they do, the great language of that civilization will be English. All this will add time and interest to its study. But at present it is evident that we have not devoted enough time to this study to remove the defects, and it is possible that this insufficiency in time is one of the causes of these defects.

3. The Worthlessness and Non-educative Value of much of our Language Work in the Schools is also a Cause of the Defective English. The language lesson, when it appeared a few years ago, was somewhat of an experiment. The term was so hazy, so indefinable, so nondescript, that even the authors scarcely knew its content or its limitations. The result was a flood of text-books from various sources. These books gave some excellent hints, good suggestions, and many valuable lessons; but much of the space was devoted to foolish experiments, idle guesses, and to empty exercises that contribute little, or perhaps nothing, to the child's mastery of the mother-tongue. Teachers have faithfully followed these books, even when the lessons seemed to be without purpose or edge, or promise of hopeful results. The seed was carefully sown, and we had to wait for the harvest before we could be abso-

lutely sure that some of it was entirely devoid of life. Now we know that much of the time and labor in this language field was wasted, because of the worthlessness of the seed. Dr. Stanley Hall boldly as-
serts that "The cause of this deterioration
in young persons' English must be ascribed to the kind and amount of language lessons that have lately come into such prominence." Many may not concur in this sweeping conclusion, but all must admit that much of the language work has been absolutely worthless and devoid of good results, and as such it must be regarded as one of the causes of our imperfect English.

Stanley Hall
quoted.

4. **The Study of Form rather than Content in Language is a Most Potent Cause for our Defective English.** The formal study of language regards it as a science, and includes grammar, analysis, and rhetoric. The content side of the study regards it as an art, and includes all that constructive work which results in correct habits of expression, and which gives richness, force, and fluency to utterance. These habits are formed before the child can study a science, and hence constructive English should, to some extent, precede technical English. And since forming correct habits is much more difficult than giving instruction in a science, the amount of constructive work necessary in the elementary school greatly exceeds the technical. These principles have been disregarded; indeed, in some places no constructive work has been given, and technical grammar has been regarded as the only medium of language instruction in the higher grades.

This is one of the tap-roots of our defective English. For technical grammar, important as it is in its place, is purely a study of form. It deals with the mechanics

of language. It gives power of mind, not power of expression. It results in wisdom rather than linguistic skill. It gives knowledge about language rather than ability to use it. It follows the methods of a science rather than the methods of an art. But good English is not a question of science, or mechanics, or of form, but of art, content and subject matter. And the cause of much of the trouble in language is due to this emphasis on the technical rather than on the literary and the constructive sides of English.

5. Another Cause of Defective English is the Vagueness that surrounds both Matter and Method. The course in mathematics is clearly defined and the methods of instruction well understood. The same is true in reading and geography, in Latin and history. But the essential conditions that mark the limitations of good language work and the principles that guide in the instruction are vague, indefinite, and dimly defined, even in the minds of the leaders in pedagogical thought. In matter and method this department has been for years in a most unsettled condition, and teachers have experienced great difficulty in finding safe guides. We have been passing through a period of transition, in which the language-ship, much of the time, had neither compass nor rudder, and consequently it had to drift with the tide. Of this period the late Dr. Hinsdale says: "In no department of study have the schools seen more dissatisfaction, unrest, and experiment than in language. Everything is in a flux; superintendents, authors, and teachers seem to appreciate that something bearing the name English must constitute a marked feature of the schools, but they do not, as a class, at least, see clearly what it should be or

A Tap-root of
Defective
English.

how it should be taught." What to do and how to do it, in order to eradicate the garbled English in our schools, is still a vague problem to many teachers, and so long as it remains in the haze and mist that befores it, instruction in this department will be general, indefinite, and barren of best results.

These are the causes of our defects in English, and each contributes something that tends to render its conditions in the elementary schools so unsatisfactory. The first is more or less permanent, and will remain for years as a thorn in the teacher's flesh. It lies largely beyond the influence of the school, and is strongly entrenched behind the social condition of the people. But the others are temporary, and may be entirely removed, or so pruned as to minimize their undesirable effects.

A Thorn in
the Flesh.

II.—ENDS TO BE ATTAINED IN TEACHING ENGLISH.

"All aimless teaching is poor teaching," says the late Dr. White. And a knowledge of ends is just as important as a knowledge of means. Indeed, the former determines the latter. For what you ought to do to reach the desired end decides what you will do, and a knowledge of ends selects the matter and regulates the method of means. Before suggesting the means, however, let us inquire, What are the ends to be attained in teaching English? Stated in general terms, the aim is to cultivate a taste for good literature and to develop to the highest possible degree the art of expression. These are important, if the individual is to understand and appreciate the works of the great thinkers, and to use the mother-tongue in a fluent, clear, logical, convincing, and agreeable manner. One of the best mod-

ern writers on this subject says that the leading aims of a course in English are "to develop the child's power of thought, to form in him habits of correct expression, and to give him a taste for good literature." These are certainly the main ones in the elementary school.

1. The First Great Aim is to Develop the Power of Thought. The child's language is an expression of his own thought, not that of the teacher or author. It is occasioned by the exercise of his own mind upon the subject matter. But he cannot express what he does not possess, and hence thought-formation must precede thought-expression. Thinking not only precedes language, but to a great extent it determines its character.

Clearness of Thought gives Clearness and Vigor to Expression. Accuracy in thinking leads to accuracy in expression, and clearness and vigor of thought tend to give clearness and vigor to expression. If, then, thought precedes expression, if it supplies the necessary material, and gives accuracy and vigor to oral and written speech, it must be a most important end in all language instruction.

2. The Second Aim is to Lead the Child to form Habits of Correct Expression. Habit is a growth. Any act oft repeated becomes automatic. And the child ought to have a correct automatic use of the ordinary mechanics of language. Without it facility in expression and rapidity of utterance are impossible. In all rapid discourse the mind is centered mainly upon the thought, and can give but little attention to the correctness of expression. This must come largely as a matter of habit. If this is true it certainly follows that one of the chief aims of instruction in English is to give the child

the ability to use unconsciously the correct forms of ordinary expression.

3. A Third Great Aim in Language Instruction is to give the Child a Taste for Good Literature. Literature is the treasure-house of the race. It contains the choicest gems of truth and beauty, phrased by the high priests of thought and expression. It has elements of culture which the formal study of language can never give. It touches the emotional nature of the child, cultivates the taste, appeals to his artistic sense, stirs his creative faculty, and reacts upon his whole spiritual life, says a recent writer. It is the great source from which the child must enrich his thoughts and his speech. He may be able to speak fluently and correctly without a knowledge of it, but the thought will be crude and the language commonplace. Literature is the "expression of the life, thought, spirit, and humanity of the race." It gives culture to mind, richness to thought, and elegance to expression. Without some familiarity with it, choice diction and refinement of style are almost impossible. If good literature gives tone and quality to thought and grace and elegance to expression, then one of the chief aims of all language study is certainly to create a desire for it, and to raise the child to the place where he will experience real pleasure searching for its truth and beauty.

Literature
and Culture.

4. A Fourth Great Aim in Language Instruction, expressed in the Works of the Writer quoted above, is "to give the Pupil a Mastery of the Fundamental Facts of English Grammar, and to lead him to use that Knowledge in the Interpretation of Literature and in the Expression of his own Thought." This is a most important object to be kept

constantly in view. The study of technical grammar in the seventh and eighth grades gives the child a knowledge of the fundamental facts and principles, but in many schools little attention is given to the application of those facts to the expression of the child's own thought. Knowledge alone of the subject is valuable, but knowledge applied to concrete work is far better. Practice and knowledge applied are the keynotes of success. The knowledge of religion is important, but the practice of it in the affairs of life far outweighs its knowledge. The same is true in the domain of morals and education. "We studied a book telling us how to write a composition, but we did not write any," said a high-school graduate to me when the time came to prepare a commencement essay. What a criticism upon the instruction in English in that school! And yet

Emphasis placed on Applied Grammar and Rhetoric.	it may apply to more than one school. Emphasis must be placed, not on the knowledge of grammar and rhetoric alone, but rather upon the application of that knowledge to the interpretation of good literature and to the expression of the child's own thought. For it is application of the principles of language, rather than a knowledge of them, that leads to the formation of the child's literary taste, and that gives him force and fluency in the use of good English. If this is true, then one great aim in all language instruction is the application of these fundamental facts and principles to concrete work.
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With some knowledge of the causes of defective English and the ends to be kept in view in the work of instruction, let us proceed at once to a consideration of the means by pointing out some of the stepping-stones

the child must use in his upward progress toward the realms of purer and better English.

III.—STEPPING-STONES TO BETTER ENGLISH.

1. The Example of the Teacher as a Model of Accuracy and Excellence is a Great Stepping-stone to Better English. Choice diction, correct expression, and a critical linguistic habit on his part are as essential as they are helpful. "Habits of expression are caught as well as taught." This is especially true in the primary grades. "The new vase preserves the taste of the first liquor that is put into it." "And the end," according to Seneca, "is attained sooner by example than by precept." This is as true in language as in ethics. If the teacher is "good usage incarnate," if he is a

The Teacher's
English as a
Paragon of
Excellence.

"paragon of excellence," "an exemplar of a pure and polished style," the embodiment of clear and forceful English, and a tireless critic of all habits that tend to corrupt the vernacular, his example and his influence will be worth more to the child than all the grammars ever printed.

Of course, such an ideal is never found in one individual, but there are many who possess some of these qualifications. And the child that breathes an atmosphere of refined English at home, and that is fortunate enough to be under a teacher who approaches this ideal, will experience little trouble in forming correct habits of expression. But with the child from the home where the environment is antagonistic to every effort to raise the standard of excellence, the work is most difficult. In either case, however, the example of the teacher, if he is accurate and strong, easy and elegant in the use of language, is a most important aid to better English.

2. A Second Stepping-stone to Better English is Interest in the Language Work on the Part of the Pupil. Unconscious absorption is the great process through which the child acquires the use of good English. The success of this process depends upon a rich environment filled with the desirable material to be absorbed, and upon the receptive or absorbing condition of the child's mind while the process is in operation. This hungry, absorbing, receptive frame of mind in the child we call interest. It is of first importance. The man interested in a fortune generally acquires it. The boy interested in machinery becomes a mechanic. The young man interested in physical training becomes an athlete. So the child interested in language will absorb it if it is present in his environment.

The problem of instruction is to arouse the interest and supply the environment. Each alone is incomplete, but combined they form a complete language unity. The child is interested in the kernel, not the shell of the nut. Things are always interesting to children. The sled in winter is far more interesting to him than any account of it. So the substance and content of language, the child's own thought, is likely to be of more interest to him than the form or structure of the sentence by which he expresses it.

Much of the language work is lifeless. It lacks interest on the part of either teacher or pupil. It is, therefore, useless, and could be entirely omitted without loss to the child. For recitations without interest only tend to deaden and stultify the children, to foster and encourage stupidity, and to degrade to lifeless formality the sublime art of teaching. This is true in every department,

Recitations
without
Interest are
Worthless.

and especially in language work. The first essential to good language work is to create conditions that will arouse the interest of the child in the subject. Unless the child is so energized that he not only desires, but is really anxious, to take his part, the work will result in failure. The most stupid individual has subjects of great interest to him upon which he can talk forcibly, though perhaps not elegantly. Ask the jockey to talk horse, or the foot-ball devotee the game, and you unlock the very flood-gates of a fluent and forceful, though perhaps corrupted English. The child, who with strong, logical, and aggressive argument maintains his rights on the playground, is often weak and ineffective in his language work in class. On the playground his rights were touched, his interest threatened; the purpose to defend those rights was supreme and definite, and his language was the unconscious instrument of defense. As a result it was fluent, forceful, and convincing. All these conditions in the class-room will cause the lifeless body of a formal language lesson to spring upon its feet. An atmosphere of interest will thaw out the frozen powers of the child, create a desire to express that thought in the accomplishment of some purpose, and make the child as fluent and forceful in the class-room as on the playground. Thus all aflame with personal interest, and inspired with a personal desire to say something, or to convince somebody, he will quickly absorb from his environment any good English that will aid him in reaching the desired end. Thus interest is not only a great stepping-stone to good English, but it is the very foundation upon which every other one must rest.

3. A Third Stepping-stone to Better English is an Abundance of Ideas and a Desire to Express

Them. To be asked to make bricks without the necessary straw was once regarded as a great injustice. There is as much injustice in it in the class-room as in the brick-yard. Preceding all expression must be the thought and the supreme desire of the child to express it for some definite purpose. Children prefer to use the things they own. The boy likes to play with his own toys rather than those of his companion. The thought that he is to express should be his own, occasioned by the exercise of his mind upon the subject matter. Too much of our language work asks the child to express the ready-made thought of the teacher or the author. This suppresses both the interest and the desire of the child. Again, the child is asked to speak or write before he is ready with suitable material. The stone and mortar must be supplied before the wall can be constructed; so an abundance of ideas is necessary to growth in the art of expression.

Some modern writer has said that it is better to be able to express seven ideas in one language than to express one idea in seven languages. The first object in language instruction is to develop the power of thought, not only because accuracy in expression springs from accuracy in thought, but because it supplies the necessary material for expression. Morgan says, "Carlyle was a great writer in spite of his barbarous English." This was because his mind was a storehouse of majestic ideas and sublime thoughts that are attractive even when clothed in the garb of clumsy English. But the best linguistic garb is of little use without an idea on which to fit it. As principles must precede formulas, as processes precede rules, so ideas must precede expression.

The First
Requisite of
Language
is Something
to Say.

An abundance of ideas on the subject to be discussed is a pre-requisite to the discussion of it, whether that discussion be oral or written. This, then, like interest, is a stepping-stone to better English and a foundation for all the other stones. For each thought calls forth its own sentence, and without thought there can be no expression.

4. A Fourth Stepping-stone to Better English is the Improvement of the Child's Vocabulary. Howell says, "Words are the soul's ambassadors," and anything that enlarges and enriches the child's working vocabulary adds to his power of expression. Words are like spectacles; we look through them rather than at them. Through their transparent forms we see the ideas which they represent. Thought is externalized by words. They are the neat-fitting or the ill-fitting garments in which we enrobe our ideas as we send them forth. If ideas are important, so are words, for every idea must have its corresponding sign. If this is true the abundance of ideas that may be expressed depends somewhat upon the words at our command. And the very range of our thought is limited by the power to set it forth in suitable words. A limited vocabulary means, to some extent, a limited range of thought and a limited power of expression. The importance of a rich and extended vocabulary as a stepping-stone to good English cannot be overestimated. A deluge of words with little sense illustrates the truth of Pope's famous lines :

"Words are like leaves, and where they most abound,
Much fruit of sense beneath is rarely found."

But the right word fitly spoken is what I mean. The rich, strong word, that exactly voices the sentiment of

the heart, and wings into the outer world the exact idea of the mind, is the word that should be selected. Such words are thought in action; they are the weapons of the soul; with them its battles are won by convincing logic, entrancing eloquence, fascinating conversation, and persuasive appeal. It is this right use of words that Dr. Nightingale has in view when he says, "Words are the ammunition in the battery of intelligence; steam in the engines of thought; true coin in the exchange marts of scholastic culture, the common carriers of all thought, and the drawn swords in all strife." If this is true a rich and extended vocabulary is of great importance, that every noble thought of the child may enrobe itself in the language that befits it. For while a blemish in a diamond may be removed by polishing, a defect in language affects the very fibre of the human soul and defies all ordinary efforts at removal.

The Right
Use of Words.

"Boys flying kite haul in their white-winged birds;
You can't do that when you're flying words.
Words unexpressed may sometimes fall back dead,
But God himself won't kill them when they're said."

In extending the child's vocabulary we enlarge his ability to set forth his thought in suitable oral or written language. This properly includes three things,—the spelling, the pronunciation, and the ability to use the word as an instrument of thought. It is essential that these three go hand in hand, at least in all schools above the lowest primary. The power to use words effectively is greatly impaired in many schools by teaching the child to spell the word without giving him a mastery of its use. For it is the use of words, rather

than their spelling, that makes them circulating mediums of thought. And words you can spell but cannot use are like dollars stored in a vault; they accomplish nothing. It is not the spelling alone of the word, but the spelling and the use of it, that makes it part of the child's vocabulary. In extending his vocabulary he should be taught to syllabize, as an aid both in spelling and pronunciation. The child learns to pronounce words by hearing them pronounced correctly or by consulting the dictionary. He learns to use them by gleaning their meaning from the printed page, by hearing others use them appropriately, or by a study of the dictionary. Out of these facts arise three suggestions that will greatly aid in enlarging and enriching his vocabulary.

What an
Extended
Vocabulary
Means.

(a) In diction and pronunciation the teacher should be a correct model for the child. As he uses a new word, the child is likely to use it.

(b) The words in the spelling-books for intermediate and grammar grades should be separated into syllables and marked for pronunciation; and each should be used in a sentence that will clearly set forth its meaning. In the absence of this the teacher in pronouncing all words to be spelled should use each in a sentence.

(c) In the grammar grades and the high school more time should be given to the study of the dictionary to give the child a purer diction and the ability to appreciate the delicate shades of meaning contained in words. Our language is especially rich in synonyms, words expressing approximately, but not exactly, the same idea. And richness and purity of diction call for the word that will exactly express the shade of meaning desired. The study must not

Richness
and Purity of
Diction.

degenerate into hair-splitting distinctions and puerile subtleties, but to that exactness which enriches speech. A copious and correct speech avoids monosyllabicism on the one side and stilted polysyllabicism on the other. Accurate and scholarly diction calls forth the right word in the right place and avoids all clumsy expression. And this study of the dictionary will greatly aid the child in acquiring the power to use English words in their proper places.

Then, if we teach empty words without their corresponding ideas, we are likely to illustrate Pope's words in the *Dunciad*, and place our schools on a level with those whose work called forth his scathing criticism :

“ Since man from beasts by words is known,
Words are man's province, words we teach alone.

* * * * * * * *

We ply the memory, we load the brain,
Bind rebel wit, and double chain on chain.
Confine the thoughts, to exercise the breath,
And keep them in the pale of words till death.”

Beneath the surface of Pope's fine satire is a lesson in pedagogy that it is well for us to heed. We may kill the thought as well as the interest by exercising the breath in spelling meaningless symbols. Such misguided efforts would reduce language to a mere jargon of words. But effective work in orthography always presents the jeweled gems of thought along with the beautiful caskets in which they were first placed by the philologists. Separated, each is useless, but united, they form one's vocabulary. The child's vocabulary, then, includes only the words he can

A Jargon of
Words.

use in oral and written language. And it follows that a rich and extended vocabulary is one of the most important of all aids in acquiring a fluent and facile use of the mother-tongue.

5. **Another Stepping-stone to Better English is the Oral Language Lesson.** The importance of oral work in the primary grades is often underestimated. There seems to be a notion that much of the language should be written. In practical life oral speech is far more important than written. The use of the former is a thousand times that of the latter. Habit is stronger than instruction, and the habits of expression formed by the child remain in spite of the knowledge of syntax he acquires later. As a result, many persons who can write in almost faultless English are unable to give utterance to a dozen thoughts without the most glaring errors in syntax.

The main object of language instruction in the primary school is to give the child habits of correct oral expression. Since the child can talk before he can write, and much faster than he can write, the oral lesson must be regarded as the chief instrument of instruction in such schools. The child enters school with incorrect habits. If you cannot remove them and form correct ones, all other instruction will be of little use in oral speech. The best work that can be done in the elementary school is to note the incorrect habits, and then induce the child to talk in such a way as will remove them. This oral work may proceed along many lines.

(a) Place an object before the child. Train him to observe its size, shape, color, characteristics, and use. Then induce him to talk about it as his observations suggest. This will train both mind and tongue.

(b) Place a picture before him. Train him to read in it, if possible, the artist's meaning, and also what his own imagination suggests. Then induce him to talk about it. This has one advantage over the first,—it cultivates the imagination; and when you touch the imagination, says the late Dr. White, you unlock the powers of expression.

(c) Tell the child in faultless English a fascinating story. The tone and language should be such as will expand and enrich both his morals and his vocabulary. Then let him reproduce the story, using as much of the choice language as possible. This trains the memory and the morals, as well as the art of expression. And in all this oral work the teacher should remember that clearness of thought, facility of utterance, accuracy of expression, and richness and purity of diction are just as important as in written language.

Then there is too much written work in the school. Dr. Rice says that all the instruction given in a day could be done in two hours. Much of the written work takes time and gives no educative return. Arithmetic without pencils or crayon in some primary schools would save much time and give the pupils much more ability. And the endless round of copying and writing language work in the elementary school requires time and saps the vitality of the child; it is often injurious to his eyes, leads to incorrect habits of posture and pen-holding, and gives very little educational return. The oral language lesson in economizing time and effort, and in giving correct habits of oral expression, is a most important stepping-stone to better English. And its value and possibilities as such in the elementary school have scarcely been realized.

6. Another Important Stepping-stone to Higher

Planes of Linguistic Culture is the Reading and Study of the Masterpieces of Good English. The value of this aid no one can doubt. Next to the child's association with cultured people in the home and in the school, no other agency is so potent in the enrichment and cultivation of the child's habitual use of English as literature. The child absorbs his mother-tongue from that part of his environment in which he is deeply interested. If we can create an interest in good literature, and bring an abundant supply of it into his environment, we thereby create the conditions in which the process of absorption may, nay, *must* take place. Literature is a most impressive teacher. All unconsciously the child is trained by it into the automatic use of a correct and copious English. It is the business of the school to put this effective teacher into right relations with the child, that all obstructions to his work may be removed. And the most important phases of this right relationship are those of environment and interest. Through the agency of books, choice gems, stories, and poems, we can create a taste for the best, and, if possible, supply a good literary environment where the child may

“Mingle with the great and wise,
Roam, unmolested, the vast treasures,
Where wisdom's priceless gems are scattered free.”

Mr. Lowell once said, “The Greek classics are crammed with life.” So are many of the English classics. And the child that feels the thrill of that life is influenced by it. The truth and beauty of that life, coined by great masters of thought and expression into their choicest gems, must, all unconsciously, through the power of imitation and absorption, be-

Mr. Lowell's
Fine Phrase.

come a part of the child's life. His life meets the author's at the glow-points of interest, and part of the richness and beauty of the larger life is transferred to the child as his permanent possession.

The influence of literature on the great writers is very suggestive. The reading of two books made Hans Christian Andersen a great author, and gave to the world one of its brightest literary stars. Milton from childhood read the choicest literature of all schools. It is said that he was familiar with the best classics before he was twelve, and his fame as a writer was secure and his name immortal before he was thirty. Bryant at nineteen astonished the poets of the old world with his *Thanatopsis*, but he escaped the modern language lesson and much of the technical grammar while he devoured voraciously the best in literature. Hawthorne studied classics before he produced them. John Burroughs ascribes to Emerson his improved literary style, while "Matthew Arnold taught him clear thinking and clean writing." "Charles Lamb devoted much attention to early English literature." Speaking of the education of his talented, yet erratic, sister, who aided him so much in the preparation of the "*Tales from Shakespeare*," he says, "She was tumbled early, by accident or design, into a spacious closet of good old English reading, and browsed at will upon that fair and wholesome pasturage." "The flower of Athens' best culture thronged the Academic Gardens to hear the sweet speech of the master, melodious as the song of the cicadas in the trees above his head." Yet, Plato lived before the days of language lessons and technical grammar, and four hundred years before the first rhetoric. Addison was the pride of the London literary world at

twenty-three, but his father was a "voluminous and an agreeable writer," and the boy lived in an atmosphere of literature and culture. In speaking of the dignity that marked the expression of some of the earliest writers, a modern critic remarks: "Their speech was noble because they lunched with Plutarch and supped with Plato."

The Influence of
Good Literature.

These examples are very significant. And while our children in the schools are only common mortals, when we think of them in connection with these great stars, yet the same law holds good. And if they are permitted to lunch and sup with the grand masters of thought and expression, they are sure to absorb some of their force and elegance.

After selecting the gems, poems, stories, and books for this work, the question naturally arises, How shall we use them that the best results may be secured? The best answer to this question is that the child needs the facts of literature rather than facts about it. The value of this subject is mainly in its content, not its form; in its subject matter, not its history. The husks and shell of form, and facts that throw light on the history of the subject are important in their place, but their value is as nothing when compared to the kernels of thought. The child must be fed mainly on the facts of literature spiced with the simple historical dressing that will interest him. He must get the subtle aroma of good English as it comes to him bottled up in the clearest thought and the choicest gems. He is to read, memorize, and think about the best, and absorb as much of it as possible.

Slaking the
Thirst with-
out Drinking
the Well Dry.

He may not be able to comprehend all of the wealth of thought and the beauty of expression in a gem of

literature, but he can apprehend and absorb part of it. He cannot drink the well dry, but he can slake his thirst and make part of its contents his own.

The study of literature is one of the great stepping-stones to better English. And the teacher who would do most for the child must remember that the facts of the subject are better than facts about it; that content is better than form; that habits of expression are caught as well as taught; that apprehension precedes comprehension, and that absorption is the most potent of all processes by which the child is to acquire a mastery of the mother-tongue.

7. Composition is an Important Stepping-stone to Better English. In it the purpose is to put the thought into the best possible English. All the pupil's knowledge of the fundamental facts of language is brought to bear upon the written sentence or paragraph. The mind of the child sits in judgment upon the expression. It demands clearness, force, and elegance. The composition may not embody these qualities to any great extent, but the mind that makes the effort is lifted toward them, for facility in any art comes not so much from practice as from careful practice on the highest level of the pupil's best effort. This practice in composition is one of greatest aids to linguistic excellence. And no teacher can expect a child to be able to express his thought freely and forcibly in choice phraseology and terse English without abundant practice in the art of composition.

(a) One of the simplest forms of composition is the dictation exercise. This exercise is exceedingly valuable in helping the child to break up a current of thought on any subject into suitable sentence units.

It also aids in the mastery of the mechanical forms of written language. In short, no other exercise is superior to dictation in teaching the form and meaning of words and in fixing the rules for punctuation and for the use of capitals.

(b) The reproduction of stories is an important phase of composition work in the lower grades. The story should be told in choice English, and a few important words from it, that will enlarge and enrich the child's vocabulary, written on the board and thoroughly taught to him. These words should be placed and grouped in the order in which they occur in the story, that they will not only serve as suggestive keynotes to its reproduction, but also aid in its division into paragraphs.

(c) Letter-writing is another important phase of composition. And in this it is well to note that the letter includes more than the heading, address, and subscription. These are important in their place, but it is the body of the letter that is valuable as a composition exercise. Some teachers think the work of letter-writing is completed when the child can punctuate correctly these formal parts. This is a mistake. The child is just prepared then to begin the work. Do not neglect the form and be sure to emphasize the content.

Practice as
an Aid to
Linguistic
Excellence.

(d) In the intermediate and grammar grades the paragraph should be given special attention. At first it will be very imperfect, but with much practice it may be made a unit of composition. As such it will have an introduction, a discussion, and a conclusion. Its unity will be as complete in itself as the unity of the composition.

(e) The personal narrative is an important aid in composition. It may be real or fictitious, giving an account of some experience or some imaginary trip or adventure. It is one of the easiest forms of composition. The material is within easy reach of the child, and its personal character breaks up the stiff formality that is liable to mark all early efforts to compose. It is always one of the most popular forms of composition. The child experiences a keen delight in relating what he has done, where he has been, and what he has seen. The teacher who will give it a trial will find the personal narrative a simple and yet a most valuable part of composition.

(f) Description is another important part of composition. This is simply the portrayal of the characteristics or appearance of anything by means of words. It is, perhaps, a little more difficult than simple narration, and in practice should follow rather than precede it. To describe well is as difficult as it is important. For it calls for careful observation and accurate delineation. And yet it holds such an important place in almost every variety of composition that every child at some stage of his language work should have some practice in it. The child's imagination is likely to magnify and distort things, and great care must be exercised lest his description, by the use of too many superlatives, overdraw and exaggerate the real facts.

(g) The argument is a form of composition that may be used to advantage in the eighth grade and the high school. It is a statement of reasons that establish a definite conclusion. Force and clearness in expression are its essential characteristics. The child at

this age may not reason with much logic, but in all debate the purpose is so definite that the language part of it is easier for him than is generally imagined. Children have their opinions on simple subjects, and in the interests of both logic and language they should be trained to express them. On the play-ground they are constantly affirming or denying, and the argument is such an important weapon of linguistic warfare that every child should be trained to construct it.

Opinions Are
the Results of
Thought, and
the Occasion
for Expression.

(h) After the child has had some practice in these simpler forms, he is ready to try the more formal composition. This embraces several paragraphs, and is a unit in itself, including an introduction, a discussion, and a conclusion. The production of a formal composition naturally sub-divides into three distinct parts, the subject matter, the order of its arrangement, and its written expression. The first and second are the joint product of the teacher and the class. Together they suggest the thought and arrange the outline for the composition. Each main division in the outline will suggest the subject matter for a paragraph.

It is wise to select simple subjects within the range of the child's thought. Care must be taken if you select historic, geographic or encyclopedic subjects, lest the pupil learn to compile rather than compose. This can generally be avoided by having the composition written in the school, under the immediate supervision of the teacher.

After the subject is selected one lesson period is spent in its development. The field of fact around it is carefully examined and explored. The teacher directs the thought of the class and

Getting the
Subject.

suggests the lines of investigation. Under skilful guidance the pupils think, discover, conclude; they select and arrange material, and a rough skeleton outline is prepared to give form to the composition and to direct the child's thought at each point as he writes. This concludes the first and second stages of the work, and it is well to wait for a week or ten days before writing, that the child may have time for reading and thinking on the subject.

The third stage of the work is mainly that of the child. The outline is before the pupil, but the thought it suggests and its written expression are purely his own. He grasps the pen with pleasure because interest, preparation, and arrangement have robbed the formal composition of its terrors. The result is a set of compositions from a class; each with the same form and general thought content because of the outline, but each coined in the individual expression of the child who wrote it.

The Teacher
Helps to
Gather the
Material and
Plan the Work;
the Child Writes.

The correction of these compositions is an important part of the work. It is wise to have one member of a class write on the board that all may get the benefit of the public criticism of it. As the class writes the teacher should move from seat to seat, making suggestions and correcting and preventing errors. If all the rules for punctuation and for capitals belonging to the grade are taught early in September, the pupil can apply them during the year, and save the teacher much of the work of correction. All misspelled words should be corrected and used for special drills. All grammatical errors should be collected in a book for that purpose, and then made the basis of a lesson in grammar before the next

composition is written. It is wise to place the initials of the pupil in this book opposite the errors he has made, that you may bring those errors directly to his notice in the class. After the compositions have been corrected individually by the teacher, the child should rewrite them in a book for that purpose. This plan of correcting compositions requires some time and much work on the part of the teacher. But it will bring its return. The individual child is brought face to face with his imperfect English and he soon acquires some power to direct his own thought and to select the language with which to express it.

The number of compositions to be written in the year must vary with the grade and capacity of the children. The reproduction of the story, the writing of personal narratives, simple descriptions, short letters, require little previous preparation on the part of the child, and one or two such exercises can be written each week. But the formal composition is different. It takes the language period of one day to gather and arrange the material; another for the writing, and a third for the lesson in false syntax that springs from it. It thus takes three days to write and correct each one, and one every ten days would devote three-tenths of the child's time in language to composition. This is not too much. The teachers who require but three or four compositions in a year should never find fault with the children's defective English. They might just as well try to fatten a turkey by feeding it four times a month as to make a pupil clear, strong, and accurate in composition by writing four times a year. The way to learn to write is to write. And the teacher who has no better plan, and who will faithfully and persistently

Practice Makes
Perfect.

follow the imperfect one suggested above will find that there is, at least in the higher grades, no other stepping-stone to better English that is more important than composition.

8. The Formal Study of Technical Grammar and Rhetoric is a Valuable Stepping-stone to Better English. But it is to be noted that this belongs to the seventh and eighth grades and the high school, and that the child's habits of expression are largely formed before the influence of these studies can be brought to bear upon them. They put him in possession of the fundamental facts of language, and these facts aid him in understanding good literature and in critically passing upon his own English or that of another. White says that "English grammar at the proper age trains the analytic judgment, develops the power to interpret language, and establishes a standard for the correction of errors in one's speech and in that of others; but it is of little value to the child in acquiring the art of expressing with facility what he knows." Compayré, quoting Herder, says, "Grammar must be learned through language, not language through grammar." And Spencer declares that "as grammar was made after language, so it must be taught after it." Marcel thinks that "grammar is not the stepping-stone, but the finishing instrument." These

What They
Think.

eminent authorities seem to agree that technical grammar is something in a course in English, but not everything. And the thoughtful teacher cannot fail to see its true value. He will not regard it as a fetich to be worshipped with blind adoration, or a pariah to be despised and shunned, but rather as a valuable servant in the work of interpretation, and as a judicial critic that passes upon errors and ever holds

aloft the standards of accuracy and elegance. And while it does not greatly aid in the mastery of the mother-tongue, and contributes little in the fluent and facile use of the vernacular, yet it throws light on the science of language, gives logical mental discipline, establishes the rules of syntax, and furnishes a key to the interpretation of good literature. And hence it must be regarded as one of the stepping-stones to better English.

9. The Last Stepping-stone to Good English, and perhaps not the least in importance, is the Literary Society. And it is to be regretted that it is in so many communities passing into "a state of innocuous desuetude." In it the child studies and declaims the choicest and best, and tries to express his own thought in terse, strong, accurate language. These efforts are rich in their returns. The masters of debate have ever been masters of logic and of clear, strong English. "Who goes on paper with Hamilton," said Burr, "is lost." The same was true of him who met him in debate. And Hamilton, Webster, Adams, Clay, and Lincoln, and all the other masters of forensic speech, owed much of their power to the old-fashioned literary society or debating club. It made them the ready masters of their own thoughts and speech, and through them they learned to sway and control others. In all debate the purpose is so definite, the desire to win so great, the interest so intense, and the appreciation of popular applause so fascinating, that the very floodgates of logic and language are opened by it. It trains the boy to speak while thinking and to think while speaking. He seeks the clearest thought and the strongest language that he may convince others. And for these two qualities, at least, the

The Effort to
Convince
Makes Logic
Clear and Lan-
guage Strong.

debate is a most important stepping-stone to better English.

The problem of English will always be important. "For syllables," says Selden, "govern the world." The tongue is sharper and "the pen mightier than the sword;" and he who is master of these subtle weapons will help rule the race. The "power to think well, speak well, and write well" is the crowning glory of all education. It means facility, fluency, accuracy, clearness, force, and elegance in the use of language. And while it is the chief purpose of the school to give this power, yet it is almost as rare as it is desirable. It is important, then, that every teacher shall have a clear and comprehensive view of the whole subject; that he shall see definitely the causes of defective English, the aims of all instruction in this department, and the stepping-stones by which all may rise to a better use of the vernacular; and that all the lines of language work, the formal, the literary, and the creative, shall be carried forward, side by side, each supplementing, aiding and correcting, yet not superseding or overshadowing the others, until the pupils in all institutions, from the elementary school to the college, shall be given a more complete mastery of the mother-tongue.

TOPICAL OUTLINE

ENGLISH IN THE RECITATION

I.—CAUSES OF DEFECTIVE ENGLISH.

1. Heredity and home-environment.
2. Insufficient time given to the study.
3. The non-educative value of much of our language work.
4. The study of form rather than content in language.
5. The vagueness that surrounds both matter and method.

II.—ENDS TO BE ATTAINED IN TEACHING ENGLISH.

1. To develop the power of thought.
2. To form habits of correct expression.
3. To cultivate a taste for good literature.
4. To give a mastery of the fundamental facts of English grammar

III.—STEPPING-STONES TO BETTER ENGLISH.

1. The example of the teacher as a model of accuracy and excellence in language.
2. Interest in the language work.
3. An abundance of ideas and a desire to express them.
4. The enlargement and enrichment of the child's vocabulary.
5. The oral language lesson.
6. The study of the masterpieces of good English.
7. Composition as an aid to better English.
 - (a) Dictation work.
 - (b) Reproduction.
 - (c) Letter writing.
 - (d) Paragraph writing.
 - (e) Personal narration.
 - (f) Description.
 - (g) Argument.
 - (h) The formal composition. It includes three steps:
 - (1) Gathering the material (Thinking).
 - (2) Deciding upon a plan (Planning).
 - (3) Writing the composition (Expressing).
8. The study of technical grammar.
9. The literary society.

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